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ABSTRACT

In October 1989 Alaska conducted its statewide student assessment. Over 23,000 students in grades 4, 6, and 8 completed the reading, mathematics, and language arts sections of the Iowa Tests of Basic Skills (ITBS). At the same time, a series of questionnaires asked building principals about their schools' philosophy, climate, and problems; asked teachers about their students' special needs, ethnicity, and bilingualism; and asked students about their study habits and attitudes. Although statewide average ITBS scores were similar to national norms, school district performance varied on the individual percentile scale from the single digits to the 70s. School size was not the primary determinant of basic skills achievement. Achievement was strongly related to English language proficiency and the cultural expectations of the community. Even large per pupil expenditures and low teacher-student ratios have not erased achievement differences across the state's cultural groups. Higher test scores were associated with having attended kindergarten, with habits of more frequent outside reading and less frequent television watching, with aspirations to attend college, and with lower teacher and principal turnover. Appendices include an ITBS answer sheet; teacher, student, and principal questionnaires; and profiles of student demographics and ITBS percentile ranks for the state and for a high and a low performing district. This report contains 32 references, 18 data tables, and 18 graphs. (SV)

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THE ALASKA STATEWIDE ASSESSMENT

IMPLEMENTATION AND OUTCOME

1989

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THE ALASKA STATEWIDE ASSESSMENT IMPLEMENTATION AND OUTCOME 1989

The Setting

Alaska - the name of the state derives from a Native American word which is sometimes translated as "The Great Land" - is a remarkable physical and educational environment. More than twice the size of Texas, Alaska covers 570,833 square miles and houses a population of 531,000 individuals. The Alaska coastline is longer than that of all of the 48 contiguous states combined and the mountains of Alaska are the highest in North America. The state stretches from the tundra north of the arctic circle where there is no sunrise for more than three months nor a sunset for another three months to the marine climate and logging camps of the Southeastern panhandle.

Schools in Alaska provide services to a population spread from the urban center of Anchorage to some of the most remote school locations in the United States. Anchorage is the home to an urban population of 222,950 individuals with better than 41,000 students in 73 schools in an area of 1,884 square miles. Anchorage's relative density contrasts sharply with that of the North Slope Borough on the arctic coast where a population of 44,280 people, with 1,544 students served by 9 schools, is spread across an area of 88,281 square miles. In the North Slope Borough, the average school attendance area is 9,809 square miles.

There are small population pockets in the state spread over large areas. This means that schooling in Alaska can be dramatically different from schooling in most areas of the United States. Several of the geographically larger Alaskan school districts cover more square miles than the state of Kansas. No roads connect the remote villages scattered throughout the state. Some itinerant teachers who work with gifted or other special needs students may spend up to two hours in a small airplane to move between work sites. In many bush schools, teachers and administrators often are forced to perform non-instructional duties such as keeping school electrical plants running and attending to the physical and mental health needs of their small remote communities.

Many schools and school districts in Alaska serve relatively large numbers of students who would be considered disadvantaged or "at-risk" if they were attending a typical school in the "lower 48." Rural and remote school sites often are locations where there is a high degree of bilingualism, a great deal of poverty, and small enrollments which often result in limited services for both disadvantaged and highly able students. Twelve of the fifty-four districts in Alaska have more than half of their students enrolled in free and reduced priced lunch programs. Eight districts report that more than half of their students are bilingual. Such populations are not unusual in the remote areas of the state.

Attendance figures provided to the Alaska State Department of Education show that there were 241 school sites in Alaska which served kindergarten through twelfth grade students in a single facility and another 143 schools which included grades Kindergarten through eight. Hundreds of rural schools have enrollments of fewer than 100 students and three or four grade levels may be instructed by a single teacher. When the Alaska Statewide Assessment was completed in fall 1989, there were 55 Alaskan schools which had three or fewer students at grades four, six or eight. There were eighteen high schools in the state which graduated only one student in 1987.

The State Department of Education is currently defining, developing and collecting a number of indicators of student, school, and school district performance in Alaska. The intent is to collect data about the Alaska education system which will be useful to local and state decision makers as

they make choices about education and set educational policy. Eventually, the State Department of Education hopes to establish a data base which will contain information about the educational context, the process of education as it is implemented within schools and districts, information on dropouts from grades seven through twelve, information on writing skills derived from a tenth grade analytical writing assessment and basic skills achievement information from the Alaska Statewide Student Testing Program. Consideration is also being given to including data from student portfolios and from early childhood assessments in the statewide data base.

The major goal of the Alaska Statewide Student Testing Program is to collect information about students to inform policy makers and educators as they plan and make decisions about school districts in Alaska. Statewide student testing is one tool in a system to measure and make the Alaska education system accountable. It is the first element put into place in what is to develop into a complete accountability system. Fall 1989 marked the first implementation of the new Alaska Statewide Testing Program. However, that implementation was the culmination of a long history of state assessment, legislative interest and State Board of Education directive.

History of the Alaska Statewide Assessment

Alaska actually has had a relatively long history of assessing students on a statewide basis. In 1975 the Alaska State Department of Education started what was to become a biennial assessment of students in grades four and eight in the areas of reading and mathematics. This program was developed as a criterion referenced test system, keyed to a list of objectives and to diagnostic and instructional materials developed or available through the Department of Education. Local district personnel, serving on statewide committees, set the objectives to be included on the tests and set expectations for student performance based on teachers' experiences in a cross-section of Alaskan schools. The actual test instruments were developed by an outside firm under contract to the State Department of Education.

Aggregated statewide reports of the performance of students for the 1975 through 1985 assessments were prepared and distributed. Each school district was provided with results for local students and a copy of the statewide performance levels. No detailed statewide document was prepared which reported district by district performance and the State Department of Education refused to release any individual district information. School districts, the State Board of Education, and members of the Alaska State Legislature indicated a desire for more comparative information. In general, however, users were positive about the Statewide Assessment. (Hazelton, 1985).

In 1985-86, the State of Alaska was confronted with a precipitous drop in revenues due to a substantial decline in the worldwide price of oil. Many local and statewide governmental programs were cut severely. Education was not excluded from the budget axe when it fell. Statewide assessment was one of the programs which was drastically reduced, with all of the operating funds for the assessment eliminated. At the same time, the State Legislature let it be known that it was very interested in accountability and in particular interested in acquiring assessment information on a district by district basis.

The State Legislature, through legislative intent statements, directed the Alaska State Department of Education to collect and report the results of each school district's own standardized testing program. Accordingly, in 1988 and 1989, the Department of Education collected and reported this information on a district by district basis. (Alaska Department of Education, 1988,1989)

Given the lack of centralized control, the use of instruments from several different publishers, the use of materials and norms covering two or three revisions for the same publisher and

differing positions across the state as to the populations tested and the time of the year of testing, the quality of the information collected through the local programs was suspect for public policy making at the state level. As a result of concerns related to comparability of information, the State Board of Education adopted regulations requiring the selection and administration of a single norm referenced test in the state commencing in the fall of 1989. Subsequently, the Alaska State Legislature funded a program for testing all students in grades four, six and eight on an annual basis with norm referenced tests.

Implementation of the Alaska Statewide Assessment

The State Board of Education adopted regulations requiring the adoption of a single publisher's series for use at grades four, six and eight in the fall of the year. The required content to be tested was limited to reading, language arts and mathematics. The Commissioner of Education implemented a competitive proposal process to select the single standardized test series to be used in the Alaska Statewide Assessment. As part of the review process, three statewide review groups were formed to examine various tests and the proposals of testing companies.

- Content Review Committee

  The content review committee was composed of teachers and administrators from across the state. This committee reviewed each proposed test to determine the quality of the test and the extent to which the content of the proposed tests were appropriate for Alaska students.

- Technical Review Committee

  The technical review committee was composed of school administrators and district testing personnel. This group reviewed each proposed test series to determine the technical quality of the instruments. The technical review committee also reviewed the extent to which the reports which were proposed by various venders were useful and valuable for parent, school, district and state use.

- Cultural Review Committee

  The cultural review committee was composed of bilingual and multicultural education specialists from throughout the state. Each test was reviewed by this committee for obvious test item bias and for potentially distracting material. This committee tried to determine the extent to which each of the tests would be fair for bilingual and bicultural students in Alaska.

Representatives from the individual content review committees served on a panel established by the Commissioner of Education to provide oversight and set policy relative to the test selection process. The broadly based Commissioner's panel included legislators, legislative staff people, representatives of educational unions, representatives of the state PTA and representatives of various interested groups. In all, more than 70 Alaska educators were active participants in the review and decision making process for the selection of an instrument for the Statewide Assessment.

The Iowa Tests of Basic Skills (ITBS), Form G, was selected to be used for a six year period in an annual testing of Alaska students. A custom answer sheet was designed by testing company personnel under the direction of staff from the State Department of Education. The custom

sheets included questions about the students' backgrounds which were to be answered by teachers and questions about students' personal study habits and academic attitudes which were to be answered by the students. Teachers were asked to identify the racial-ethnic background of their students and to identify those students who participated in special programs such as Chapter 1, Gifted Education or Bilingual Education Programs. (A copy of the sixth grade student and teacher questionnaire is included as Appendix A.) Principals were asked to complete a form describing the organization, climate and educational philosophy of their particular school. (The principals' questionnaire is provided as Appendix B.)

A representative group of school district staff members were involved with the State Department of Education in planning the implementation of the statewide assessment. A statewide meeting of all testing coordinators was held in Anchorage in August of 1989 to acquaint representatives from all districts with the new process and requirements. Information on the tests and testing procedures was reviewed. Materials were provided which might be used in providing inservice training to individual school district staff in the administration of the tests and student surveys. The importance of including all targeted students in the actual testing was emphasized by the Department of Education staff throughout this meeting.

During the period of October 9 through October 20, 1990 Alaskan teachers tested over 23,000 students in grades four, six and eight with the ITBS. This marked the first time that the same nationally normed test was administered to students statewide in Alaska. More than 95% of the eligible public school population was tested. Results were returned to individual school district for distribution to parents and teachers in November, 1989.

In February 1990, the results of the Alaska State Assessment were presented to the Alaska State Board of Education and distributed to all of the school districts and legislators of the state. The results were reported in two volumes titled Basic Skills Performance of Alaska's Students (Alaska Department of Education, 1990,1990). An additional volume of financial and demographic information, Profiles of Alaska Public School Districts -- Fiscal Year 1989, was distributed at the same time (Alaska Department of Education, 1990). Together, these three volumes provided a statewide and district by district profile of achievement in Alaska along with some basic information on the demographic characteristics of school districts and the populations they served.

Results of the Alaska Statewide Student Assessment

The overall results from the Alaska Statewide Testing Program in fall 1989 were similar to those for most other states. In general, Alaska students did well on the Iowa Tests of Basic Skills. The average performance levels of students at grades four, six and eight were at or above the average performance levels of the national 1984 norm group in Reading, Mathematics and Language Arts. Percentile rank scores corresponding to average performance levels in Reading at grades four, six and eight were the fifty-fourth (54th), fifty-third (53rd), and fiftieth (50th) percentiles, respectively. Mathematics scores were at the fifty-seventh (57th), fifty-fourth (54th), and fifty-fourth (54th) percentiles. Language Arts scores were at the fiftieth (50th), fifty-fourth (54th), and fifty-sixth (56th) percentiles.

Issues of lake Woebegon* not withstanding, not all schools and districts in Alaska scored at or above the national average. One major issue in Alaska is the bimodal characteristics of the results. Districts with high rates of non-Caucasian students, students who come from homes where English is not the first language spoken, and high poverty rates score well below the

*See Cannell, 1989 for a discussion of the "Lake Woebegon Effect."

average. Approximately forty percent of Alaska's Districts have at least one average score below the twenty-second percentile. Focusing on the issue of student performance in these districts is a major public policy question facing education in the state at this time.

Appendix C includes six pages duplicated from the State of Alaska Department of Education report on the 1989 Alaska Statewide Student Assessment Program (Alaska Department of Education, 1990). The first two pages provide an overview of the Alaska statewide student demographics and academic performance. The second two pages provide a profile of one of the better performing districts, the Railbelt District. The final two pages provide a profile of one of the lowest performing districts in the state, the Yupiit School District. Contrasting these reports and considering that there are fifty-four school districts demonstrates the diversity which can be found across Alaskan school districts.

Issues of Concern

What do the results of the Alaska Statewide Student Assessment mean? What should the teacher, school, school district or state policy maker make of them? What light does this new testing program shed on the issues of bilinguality, biculturality, school composition and instruction that have been raised over the years by supporters and critics of various aspects of Alaska education? These are the types of questions facing educators in Alaska now that the revised testing program has provided a single standard upon which the academic performance of schools and school districts may be judged.

The Alaska Statewide Student Assessment report suggests some concerns which may be of special interest to the policy maker. The Executive Summary of the Basic Skills Performance of Alaska's Students pointed out some specific findings beyond a simple reporting of school district performance. A secondary analysis performed by the State Department of Education found that:

- Students who reported that they had attended kindergarten generally did better on the tests than students who did not.
- Students who reported that they read every day outside of school scored higher than those who reported reading less frequently.
- Students who reported that they watched 1-2 hours of television each day scored higher than those who reported that they watched for longer durations.
- Students who reported they plan to attend college or obtain an advanced degree scored higher than those who reported they planned to pursue less education.
- Lower teacher and principal turnover were associated with higher test scores (Alaska State Department of Education, 1990 p. ii).

However, little was reported in the initial state reports which made use of the Statewide Student Assessment's potential to illuminate issues at the community, district, school and classroom level. Examination of published reports reviewing related issues found them critical of some aspects of Alaska education (Barnhardt, 1977; McBeath, 1982; Kleinfeld, 1985; and Silverman and Demmert, 1986) and suggest a series questions about the effects of language on achievement, the effects of culture on achievement, the effects of school size on achievement and the relation of these potential effects to district, school and community variables. Many of these questions can now be addressed based on the information which became available in the Profiles of Alaska's Public School Districts: Fiscal Year 1989 and from the data base consisting of the

individual student performances and answers to the questions on the student questionnaires included with the tests.

This paper explores four questions which have been raised in the earlier literature, but which have not yet been adequately explored because of the lack of available information relating community, school, student and academic achievement. The questions are:

1. What is the relationship between per pupil expenditures, class size and achievement across Alaskan school districts?

2. To what extent does student performance reflect school and community size?

3. What is the relationship between individual student language proficiency and the level of bilingualism in the school with achievement?

4. What is the relationship among a community's dominant culture, its students' attitudes toward schooling and the achievement levels of the students?

School size and the effectiveness of small schools in small, remote, rural communities has been an issue of growing importance in Alaska since the Tobeluk Consent Decree of 1976 assured that any small rural community with as many as eight students would be provided with a school if the community so desired. The effect of the decision has been a proliferation of small schools where students were served in multi-graded classrooms. The problems of small schools have been identified as their remoteness, the lack of shared values between the schools and communities they serve, the lack of curriculum and the lack of preparation of teachers to work in rural, bicultural settings. The difficulty of the rural educational environment is pointed up by the thirty percent to forty percent annual turnover reported among teachers in some communities (Barnhardt, 1982).

Researchers have identified a number of factors which have and have not had positive effects on achievement and success in this environment (Hazelton , 1985) and a variety of suggestions have been made on changing elements in rural education (Demmert, 1985). Some researchers have provided case studies of successful small rural schools with high achieving students (McBeath, 1982). Some studies have indicated that schools which reflect and develop community values have resulted in substantially increased high school graduation rates (Kleinfeld et al., 1985). Other researchers have identified how schools introduced sophisticated curriculum options through the use of distance education and applications of educational technologies (Barnhardt and Barnhardt, 1983).

The bilingual and bicultural nature of many of Alaska's small schools has been documented and discussed by a number of authors. Barnhardt (1980) noted elementary schools have progressed from Russian and United States Government control, through Territorial and State control, to more local control. Many Indian and Eskimo communities have had western culture schools for fewer than 50 years (Kleinfeld and McDiarmid, 1987). Some of the schools have evolved to reflect the values of their communities and teaching techniques have adapted to local culture (Esmilka and Barnhardt, 1981; McBeath et al., 1983). Others have not adapted and have experienced serious problems with achievement test scores well below national norms (Finley, 1983). Kleinfeld and McDiarmid (1987) characterized small schools with higher achievement levels and higher student college success rates as "... predominantly Caucasian populations, located in highway communities, coastal fishing villages or service centers for a regional network of villages ... where ... English is the everyday language."

The level of bilingualism and biculturalism in the school may be the critical element to be considered in considering differences in academic performance. Salisbury (1971) indicated

that there were both differences in academic performance and culture which made adapting to college a problem for Alaska Native students. Clyne (1984) found that the cultural differences between Native and non-Native students were significant and concluded that the level of acculturation was important in the determination of learning style and the selection of effective instructional strategies. The relation of community characteristics and cultural background of students as factors effecting academic achievement was pointed out in the 1983 Alaska Statewide Assessment Report (Hiscox, 1983) where it was surmised that differences in educational support as well as a variety of other community factors including the level of bilingualism in the school might account for the generally lower performance of Native students in reading and mathematics.

Clements et al. (1978) have argued, based on the performance of Hispanic students in Texas schools, that as students continue in school with limited success, their academic achievement, attitudes toward academic achievement and attitude toward self and life in general decline. As time passes, achievement levels for some students are further and further below the normative expectations of the teachers and other students resulting in a corresponding decline in student attitudes toward school and self.

The relationship between school size, linguistic characteristics of the population, cultural characteristics of the community, and student attitudes toward learning are not easy to interpret. While it may be that culture plays a critical role in adaptation to the western school, there have been studies which have examined the reasons that Native students leave school and have found that the reasons are much the same as those of non-Native students who fail. (Fenton and Crumb, 1983, 1984). Others have shown that there are many bilingual Native graduates of predominantly bilingual and bicultural small Alaska schools who have gone on to post-high school success in academic, political and business settings (Silverman and Demmert, 1986).

Analyses and Results

The statistical analyses reviewed in this section of the paper were carried out on the VAX computer system at the Anchorage School District. The statistical package used throughout these analyses was SPSS-X Release 3.1 for VAX/VMS. (SPSS Inc., 1988)

The first pass at understanding the information derived from the Alaska State Testing Program was to build a data base using the school district as the level of analysis. Fifty-four (54) districts took part in the state testing program in fall 1989. The average (mean) NCE score across grade levels and content areas was calculated for each individual district in the state. It served as an index of achievement for the district in the analyses which followed. Two resource allocation measures were included in the data base. Average per pupil district costs for direct instruction and average per pupil total district educational expenditures were calculated and adjusted for area cost differentials. The final item included in the district level data base was average class size calculated by dividing each district's average daily membership by the number of classroom teachers in the district.

The cost per pupil information was gleaned from the Profiles of Alaska's Public School Districts: Fiscal Year 1989 publication put out by the State Department of Education. The total expenditures identified for a district in that document included:

- **Instruction Costs** were those expenditures for regular instruction, vocational education, correspondence study, special education, gifted and talented education and bilingual-bicultural education. This category excludes categorical funds restricted in use.

- **Pupil Support** covers the expenses incurred in pupil support activities such as school office, health, library and student activities -- usually not related to direct instruction.

- **Administration** costs include such items as salaries for support staff, communications, some employee benefits and travel.

- **Operations and Maintenance** includes expenses for such items as electric, janitorial services, painting and repairs.

- **Other expenses** are those not classified in the above mentioned accounts which included Community Services, Fund Transfers and Pupil Activities. (Alaska Department of Education, 1990)

The Department of Education also identified an **Area Cost Differential** for each district in the state. This differential was defined as "a ratio adjusting for the differing cost of operation between the various school districts, as codified in 1987 in AS 14.17.051" (Alaska Department of Education, 1990). Transportation costs alone make many items and services much more costly in "bush Alaska" than in the more developed parts of the state. The area cost differential adjustment attempts to bring the costs across the districts in the state to a single base for comparison purposes. The cost differential for the various districts was used to adjust the total and instructional costs to a common scale, to the extent that such an adjustment was possible.

The Pupil-Teacher Ratio for each district was the 1988-89 average daily membership for a district divided by the number of classroom teachers in the district. This teacher count included only those staff assigned as regular classroom teachers. Certified teachers in remedial or consulting roles to meet special needs of students, itinerant teachers and visiting teachers were not included in the PTR calculations.

Two additional measures were calculated at the district level. The first was the percent of the district's population which was classified as bilingual. The remaining index was the average square miles per attendance center in the districts in Alaska. The bilingualism index was identified as a possible pseudo-measure of cultural mix across a district. The size of school attendance areas index was used as a pseudo-measure of urbanization versus rural life style in the district.

The descriptive statistics of the variables just discussed across the fifty-four districts in Alaska are presented in Table 1. This table presents the mean, standard deviation and number of cases for each of the variables of interest. Information in the table shows that, on average, Alaskans support their educational enterprise very well. The district average per pupil total expenditure for education in the state was $9,051 in 1988-89, on an adjusted basis. The unadjusted outlay would be larger. About fifty-two percent of the total expenditure, $4,744 per pupil, was devoted to direct instruction. The remainder covered such items as administration, heating, transportation, maintenance and operations.

School attendance areas in Alaska are spread out, with the average attendance area for schools across the districts covering some 1,434 square miles. Average class sizes across districts are on the order of 13.4 students per teacher. Better than one-fourth of the students, on average across districts, are bilingual. Using the district as the level of analysis, average Alaskan achievement levels fall at about the forty-fifth NCE or the forty-second national percentile.

Table 1

Alaska State Assessment Information
Descriptive Statistics for District Level Variables
(District as Unit of Analysis)

Variable	Mean	Standard Deviation	Number of Cases
District Average Pupils per Classroom Teacher	13.40	2.96	54
District Average Instructional Costs per Pupil	4,744.06	1,177.29	54
District Average Total Costs per Pupil	9,050.75	2,733.84	54
District Average Square Miles per Attendance Center (School)	1,434.06	2,052.14	53
Percent of District's Population Identified as Bilingual	27.04	32.73	54
District Average NCE Score Across Grades 4, 6 and 8 in All Areas	45.57	9.79	53

The pair-wise relations between the variables defined for each district in the state are described in the table of correlations presented as Table 2. These data show that several strong pair-wise relationships exist among the variables across the Alaskan districts. Three sets of relationships might be of particular interest. The first is that the PTR-achievement and cost-achievement relationships are the reverse of what is reasonably expected. That is, across the districts in Alaska, achievement levels tend to increase as PTR increases and decrease as expenditures for education, in total and for instruction, increase.

The relationship between bilingualism and achievement was as anticipated. Districts with higher levels of bilingualism tended to perform less well than did districts with lower levels of bilingualism. The bilingualism-achievement relationship was the strongest of the achievement related relationships discovered in the district level data.

The relationship between the level of bilingualism of a district and the per pupil expenditures in the district was positive. More resources were devoted to education with increasing bilingualism. One of the products those resources may have purchased was a lower class size. The level of bilingualism was also positively related to the average size of the attendance areas for the districts.

Overall, the simple, pair-wise correlations suggest that the relationship between resources and achievement may be confounded by the issues of bilingualism and small-rural schools. That is, the fact that districts with the highest levels of resources perform less well than districts with lower levels of resources is mitigated by the problems faced in the high resource consuming districts.

Table 2

Alaska State Assessment Information
Correlations, Number of Cases and Chance Probability Levels
for Correlations Among District Level Variables

Variable	Pupil-Teacher Ratio (PTR)	Adjusted Instructional Cost/Pupil (A-INST)	Adjusted Total Cost/Pupil (A-TCOST)	Average Square Miles per School (SIZE)	Percent of Population Classified Bilingual (PER_BIL)	NCE Achievement Index (NCE INDEX)
PTR	1.000 (54)	-0.568 (54) P<0.001	-0.666 (54) P<0.001	-0.172 (53) P=0.109	-0.352 (54) P=0.005	0.444 (54) P<0.001
A-INST	-0.568 (54) P<0.001	1.000 (54)	0.885 (54) P<0.001	0.446 (53) P<0.001	0.367 (54) P=0.003	-0.365 (54) P=0.003
A-TCOST	-0.666 (54) P<0.001	0.885 (54) P<0.001	1.000 (54)	0.498 (53) P<0.001	0.557 (54) P<0.001	-0.586 (54) P<0.001
SIZE	-0.172 (53) P=0.109	0.446 (53) P<0.001	0.498 (53) P<0.001	1.000 (53)	0.280 (53) P=0.021	-0.211 (53) P=0.064
PER_BIL	-0.352 (54) P=0.005	0.367 (54) P=0.003	0.557 (54) P<0.001	0.280 (53) P=0.021	1.000 (54)	-0.734 (54) P<0.001
NCE	0.444 (54) P<0.001	-0.365 (54) P=0.003	-0.586 (54) P<0.001	-0.211 (53) P=0.064	-0.734 (54) P<0.001	1.000 (54)

Rows = Coefficient / Number of Cases / 1-Tailed Significance.

Table 3 presents the results of a stepwise-regression analysis with the district level achievement index as the dependent variable and the other district level descriptors as predictor variables. Only the level of bilingualism and the adjusted total cost per student variables actually entered the prediction equation. These two variables by themselves accounted for better than sixty percent of the variance in performance across the districts.

Tables 4 and 5 further examine the relationship between achievement levels in districts and the other variables described above. In these instances, the potential predictor variables were redefined as categorical, rather than continuous, variables. Districts with a PTR more than one standard deviation below the mean PTR were described as having "Small PTR's." Similarly, districts whose PTR was more than one standard deviation above the mean value were described as having "High PTR's." Districts with PTR's within one standard deviation of the mean were described as "Medium PTR" districts.

Table 3

Alaska State Assessment Information
Regression Analysis Examining Relationships Among
Achievement, Bilingualism and Cost

Multiple R	0.79240
R Square	0.62789
Adjusted R Square	0.61301
Standard Error	6.14483

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	3185.72977	1592.86488
Residual	50	1887.94907	37.75898

F = 42.18506 Significance of F < 0.0001

Variables in the Equation

Variable	B	SE B	Beta	t	Sig. of t
% Bilingual	-0.178227	0.031050	-0.583749	-5.740	<0.0001
Adj. Total Cost	-0.001175	3.8613E-04	-0.309492	-3.043	0.0037
(Constant)	60.734052	3.207563		18.935	<0.0001

Variables not in the Equation

Variable	Beta In	Partial	Min. Tolerance	t	Sig t
PTR	-0.024436	-0.026357	0.366067	-0.185	0.8543
Adj. Inst. Cost	0.340279	0.259731	0.174206	1.883	0.0657
Ave. Size of Areas	0.141582	0.201233	0.587012	1.438	0.1568

Prob. of IN = 0.050 (Limits reached.)

Both the adjusted instructional cost per pupil and the adjusted total educational cost per pupil were translated into categories of Small, Medium and Large using a decision rule similar to that used for the PTR variable. Interestingly, none of the districts fell within the Medium range on the adjusted total educational cost variable.

The bilingual variable was rated "Small" if less than twenty percent of the district's population was classified as bilingual. A "Large" rating on the bilingual variable indicated that in excess of eighty percent of the district's students were classified as bilingual students. A "Medium" rating corresponded to a district level bilingual rate between twenty and eighty percent, inclusive.

The square miles per school variable, or density, was categorized as "Small" if the average area per school in the district was less than 100 square miles. It was categorized as "Large" if the value was greater the 1,200 square miles. The "Medium" category contained districts whose average square miles per school fell between 100 and 1,200 square miles.

Table 4 presents descriptive statistics for the achievement index for districts broken down by categorized variables. These data reflect the correlational relations discussed earlier. Table 5

Table 4

Alaska State Assessment Information
Average Performance Levels(Mean NCE Scores) of Districts by
Various Resource Allocations, Bilingualism and Population Density

Variable	Data Type	Small Value	Medium Value	Large Value
Pupil-Teacher Ratio	Mean	40.38	44.48	53.22
	Std. Dev.	5.79	10.53	4.70
	Number	9	34	11
Instructional Costs	Mean	50.45	45.85	41.15
	Std. Dev.	7.42	10.68	6.34
	Number	8	35	11
Total Educational Costs	Mean	52.67	--	43.55
	Std. Dev.	4.00	--	10.03
	Number	12	--	42
Bilingualism	Mean	50.77	39.05	32.45
	Std. Dev.	6.37	6.47	9.63
	Number	34	13	7
Density of Schools	Mean	45.09	49.81	43.56
	Std. Dev.	10.74	7.53	9.53
	Number	22	12	20

Table 5

Alaska State Assessment Information
Analysis of Variance Results Relating District Achievement Levels
to District Resource Allocation, Bilingualism and Population Density

Main Effect	F-Ratio	Degrees of Freedom	Significance of F-Ratio
Pupil-Teacher Ratio	5.70	2 & 51	0.006
Instructional Costs	2.23	2 & 51	0.118
Total Costs of Education	9.40	1 & 52	0.003
Bilingualism	28.46	2 & 51	<0.001
Density	1.61	2 & 51	0.210

presents a collapsed analysis of variance table examining the relationship of the achievement index and each of the categorized variables as independent factors. The information in Tables 4 and 5 suggest that bilingualism, cost per student and PTR are all strongly related to student achievement in Alaska.

Overall, the review of district level information described above suggests that the relationship between resources and achievement may be confounded by the issues of bilingualism and small-rural schools. High levels of resource may be counterbalanced by high levels of need in the lower achieving districts in the state.

The district level of information is not totally conducive to examining the relationships among factors such as ethnicity, bilingualism and density of population. Some districts are entirely rural, some are entirely urban and some cover a range of settings. To examine the relationships further, a second data base consisting of individual student data, including school attendance area identification, ITBS performance and responses to questionnaires was constructed. This data base included all students tested in the State of Alaska as part of the State Testing Program in fall 1989 except those from Dillingham City School District. Late processing of forms from that district precluded the inclusion of students from Dillingham in the analyses which follow. Even with the exclusion of Dillingham City, the data base included 23,357 students who were not in correspondence study spread across 394 identified schools. Eighty-seven (87) students identified as enrolled in either state or district run correspondence programs were not included in the analyses which follow.

During the state testing process, teachers were asked to identify each individual student's level of proficiency in the English language on a six point scale (See Appendix A). Specifically, the categories were:

1. Exclusively a language other than English.
2. Mostly a language other than English.
3. Non-English and English spoken with equal ease.
4. Mostly English, but also speaks another language.
5. English that reflects the grammatical structure of another language.
6. English exclusively and not the category above.

For the purposes of this paper students were reclassified into "Non-English Dominant" individuals if their teacher rated them into one of the first three categories above. They were classified as "Influenced" by another language if the teacher rated them as Category 4 or 5 above. Students rated in Category 6 by the teachers were reclassified as "English" speakers.

Each of the 394 schools included in the State Testing Program was rated as to the level of English proficiency dominant in the school. The schools were identified based on the ratings assigned to the majority of the tested students in the building. If a majority of the tested students were Non-English Dominant, the school was classified as Non-English Dominant. If a majority of students were Influenced by another language, the school was classified as Influenced. If a majority of students were English speakers, the school was classified as English Dominant. In a few instances, the teachers in the schools did not classify the students in the tested population as to language proficiency. In these instances the authors classified the schools based on district information, information on other schools in the area and the authors' general knowledge of the areas represented by the schools.

Schools were also classified by size based on the number of students actually tested at a grade level. A school was classified as "Small" if it averaged fewer than twenty students per tested grade level. A school was classified as "Large" if it averaged more than sixty students per tested grade level. Schools who tested in the range of twenty to sixty students per grade level were classified as "Medium" sized schools.

Finally, each school was classified as to the type of community served by the school. Facilities serving students from communities of 20,000 or more people were classified as serving "Large or Urban" areas. Schools providing educational programs in areas with fewer than 2,000 persons congregated into a single community were classified as serving "Small or Rural" areas. Schools serving communities ranging in size from 2,000 to 20,000 people were classified as serving "Middle Sized" communities or "Small Towns."

The relationship among school size, dominant language characteristics of the student population served in the school and the size of the community served by the school is provided in Table 6. This table shows that the Non-English Dominant and Influenced Dominant schools are small schools serving primarily rural areas. The large and medium sized schools serve mostly urban areas or small towns and serve primarily an English dominant language group.

Table 6

Alaska State Assessment Information
Frequency Distribution of Schools Classified by Size,
Community Served and Bilingualism of Population

Community Size	School Size	Bilingualism of Schools: Non-English Dominant Schools	Influenced Population Schools	English Dominant Schools
Rural	Small	33	100	100
	Medium	--	--	7
	Large	--	--	2
Small Town	Small	--	--	3
	Medium	--	2	30
	Large	--	--	27
Urban Setting	Small	--	1	1
	Medium	--	--	35
	Large	--	--	53

Viewed slightly differently, the small schools are seen to serve a bicultural group, assuming that the linguistic variance in schools' populations is a pseudo-measure of cultural difference, in a rural setting. The towns and urban areas are mostly English dominant areas served by medium or large sized schools. This means that comparisons of student achievement across size categories is certainly confounded by the cultural differences of the communities served by the differing sized schools in Alaska.

Schools serving students from the different settings described above probably face differing sets of problems and are potentially organized differently or reflect different school climates. Unfortunately, a lack of complete information from the principals' questionnaire which was included with the State Assessment Program makes the examination of those issues problematic at best. For instance, in approximately twenty-four percent (94 of 394 schools) of the cases, it is impossible to identify even the range of grade levels served at the school based on the returned questionnaires. Since even this simplest of identifications was lacking, further review of the principals' questionnaires was not included with this analysis.

Students were required to take a restricted form of the Iowa Tests of Basic Skills as part of the Alaska State Assessment Program in the fall of 1989. Only the Reading Comprehension, Language Arts and Mathematics subtests were required by the state. The Vocabulary and Work Studies sections of the tests, normally required to obtain an ITBS composite score, were not required. Riverside Publishing Company, the publisher of the ITBS, created an "Alaskan Composite" for the state based only on the subtests required in the state program. The norms for the restricted composite were still based on the 1984 national norm group; the distinction was the elimination of Vocabulary and Work Studies as tested areas.

Using the restricted composite score as the measure of achievement for individual students, it is possible to examine the relationship among school size, community size and student achievement and the relationship among individual student English language proficiency, the dominant language type for a school and individual student achievement.

Table 7 and Figures 1 through 4 describe the relationships among grade level, school size, community size and achievement. Table 7 presents the mean Composite scores in NCE units for individual students by grade, school size and community size. Figures 1 through 4 present graphic descriptions of the interactions among grade level, school size, community size and student achievement. The standard deviations of the individual NCE scores, though not shown, within the groups are on the order of 18.00 to 22.00.

Table 8 and Figures 5 through 8 describe the relationship among grade level, school language dominance, individual student English proficiency and student achievement. Table 8 presents the mean Composite scores in NCE units for individual students by grade, school language category and individual English proficiency. Figures 5 through 8 present graphic descriptions of the interactions among grade level, school language dominance, individual student English proficiency and student achievement. The standard deviations of the individual NCE scores, though not shown, within the groups are on the order of 18.00 to 22.00. Note that some 2,564 students, eleven percent of those with ITBS Composite scores, were not classified by their teachers as to individual English proficiency.

Tables 9 and 10 present Analysis of Variance Tables examining the relationships described in Tables 7 and 8 and Figures 1 through 8. All of the main effects examined and most of the interactive effects were statistically significant factors. The only non-significant interactions were between grade level and the language categories, both for schools and individuals. That significant results were found is not surprising, given a "sample" of 22,356 cases. Near identity of cell means would be required to avoid a determination of significance. Another caution in reviewing these results rests on the imbalance of group sizes. As seen in Table 6, most medium and large sized schools serve medium and large sized communities. Most small schools serve small communities. The distribution of schools across communities is reflected in the distribution of students within the schools by community type.

Even with the cautions identified above, some interesting observations may be made based on the information presented in Tables 7 through 10 and Figures 1 through 8. First, the issue of

Table 7

Alaska State Assessment Information
Breakdown of ITBS "Composite" Score (mean NCE) and
Number of Students Tested by
Grade, School Size and Community Size

School Size	Grade Level	Community Size: Small or Rural	Medium/ Small Town	Large or Urban	All
Small	4	38.45 1,149	62.33 36	55.71 17	39.41 1,202
	6	38.56 1,097	60.30 30	65.50 12	39.41 1,139
	8	37.08 932	48.00 1	56.50 8	37.25 941
	All	38.08 3,178	61.21 67	50.05 37	38.79 3,282
Medium	4	49.86 136	51.33 934	49.94 1,450	50.45 2,520
	6	46.33 133	54.45 761	54.11 1,273	53.75 2,167
	8	48.31 104	50.67 481	62.66 58	51.37 643
	All	48.17 373	52.28 2,176	52.11 2,781	51.90 5,330
Large	4	51.29 82	56.88 1,369	55.86 3,041	56.09 4,492
	6	53.52 67	56.11 1,316	58.05 2,769	57.36 4,152
	8	43.10 92	57.47 1,351	56.27 3,657	56.35 5,100
	All	48.78 241	56.83 4,036	56.66 9,467	56.57 13,744
All	4	40.36 1,367	54.75 2,339	53.96 4,508	51.92 8,214
	6	40.13 1,297	55.57 2,107	56.83 4,054	53.57 7,458
	8	38.60 1,128	55.68 1,833	56.37 3,723	53.18 6,684
	All	39.76 3,792	55.30 6,279	55.64 12,285	52.85 22,356

Figure 1

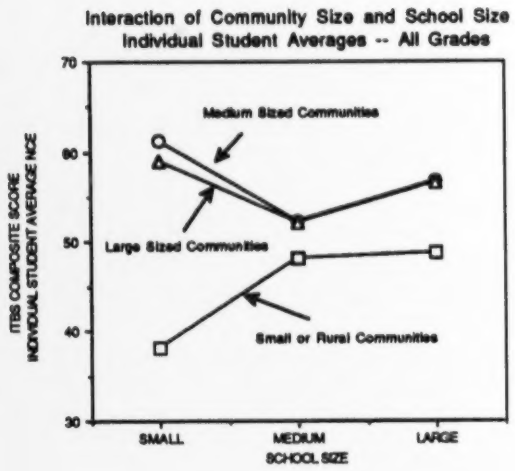

Figure 2

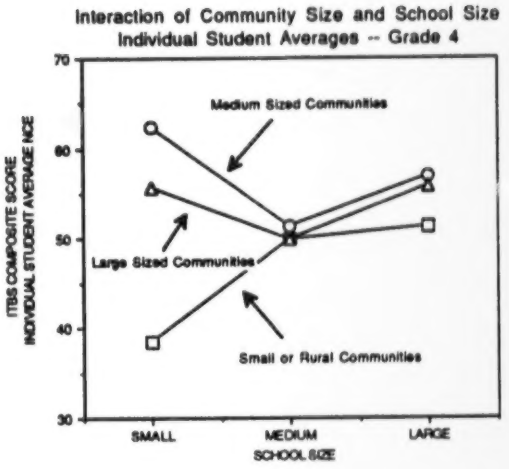

Figure 3

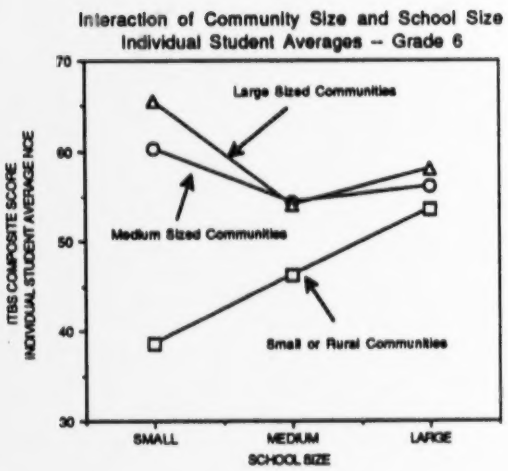

Figure 4

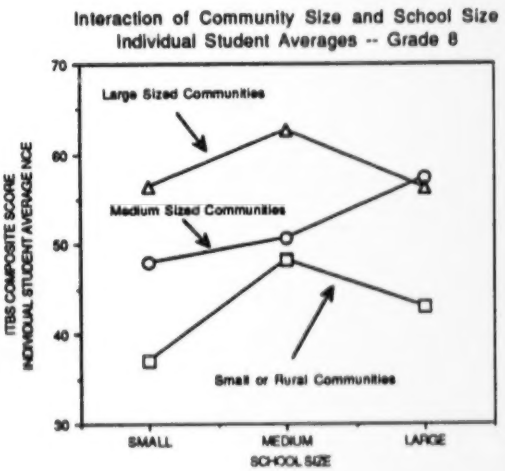

Table 8

Alaska State Assessment Information
Breakdown of ITBS "Composite" Score (mean NCE) and
Number of Students Tested by Grade,
School Dominant Language Type and Individual English Proficiency

School Type	Grade Level	Individual English Proficiency: Unknown	Non-English	Influenced by Other	English	All
Non-English Dominant	4	30.55 33	21.98 145	22.25 4	65.33 3	24.22 185
	6	37.30 33	20.61 150	29.60 5	56.83 6	24.80 194
	8	31.97 32	22.32 121	17.38 8	40.33 3	24.30 164
	All	33.29 98	21.59 416	22.12 17	54.83 12	24.45 543
Influenced by Dominant	4	31.26 101	13.20 5	32.59 404	51.41 68	34.40 578
	6	26.60 86	26.73 11	32.51 392	53.68 53	33.53 542
	8	34.06 99	26.22 9	32.91 352	56.66 29	34.43 489
	All	30.83 286	23.84 25	32.66 1,148	53.23 150	34.12 1,609
English Dominant	4	49.42 712	46.01 119	45.38 376	55.15 6,244	53.97 7,451
	6	51.58 555	49.18 114	47.45 355	57.12 5,698	56.02 6,722
	8	49.87 913	44.72 108	52.00 359	57.11 4,651	55.49 6,031
	All	50.16 2,180	46.66 341	48.23 1,090	56.38 16,593	55.10 20,204
All	4	46.52 846	32.45 269	38.67 784	55.12 6,315	51.92 8,214
	6	47.69 674	32.70 275	39.55 752	57.09 5,757	53.57 7,458
	8	47.83 1,044	32.64 238	42.27 719	57.10 4,683	53.18 6,684
	All	47.36 2,564	32.59 782	40.11 2,255	56.35 16,755	52.85 22,356

Figure 5

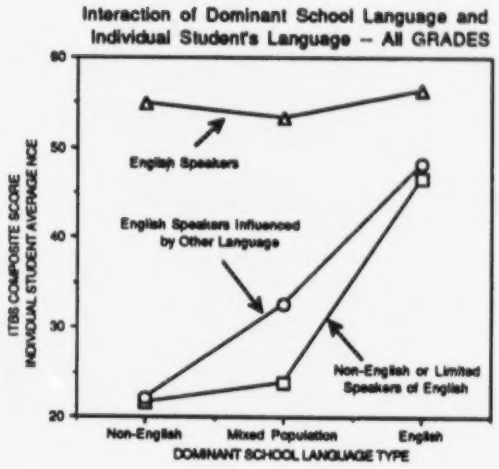

Figure 6

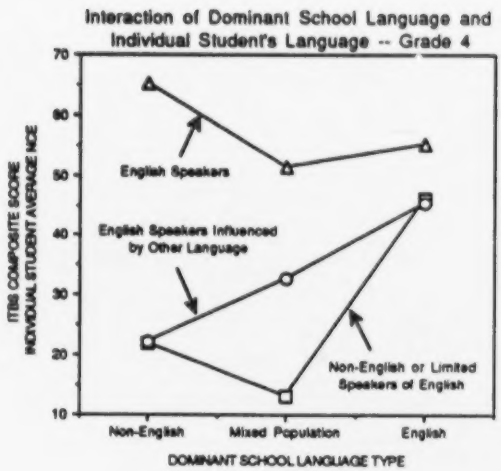

Figure 7

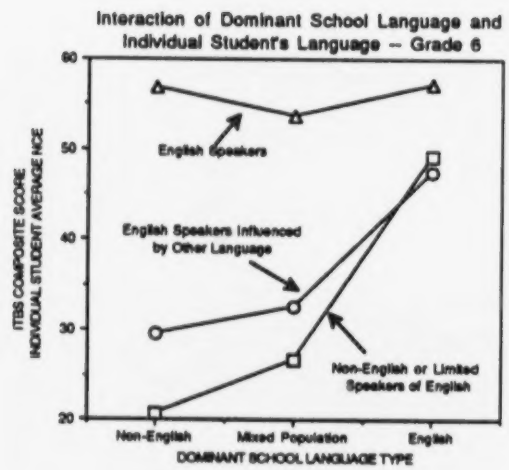

Figure 8

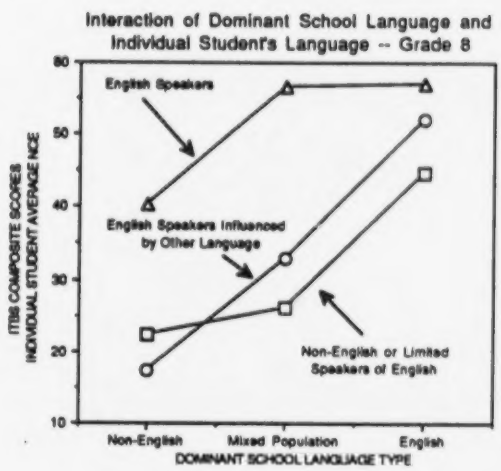

Table 9

Alaska State Assessment Information
Analysis of Variance Table
ITBS Composite Score by Grade Level, School Size and Community Size

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	901033.480	6	150172.247	74.451	<0.001
Grade	12533.756	2	6266.878	15.626	<0.001
School Size	104575.776	2	52287.888	130.379	<0.001
Comm. Size	44295.313	2	22147.656	55.225	<0.001
2-Way Interactions	39302.805	12	3275.234	8.167	<0.001
Grade-Sch. Size	4939.880	4	1234.970	3.079	0.015
Grade-Comm. Size	7435.844	4	1858.961	4.635	0.001
Sch.Size-Comm. Size	26762.840	4	6690.710	16.683	<0.001
3-Way Interactions	15637.036	8	1954.630	4.874	<0.001
Grade-Sch. Size-Comm. Size	15637.036	8	1954.630	4.874	<0.001
Explained	955973.321	26	36768.205	91.681	<0.001
Residual	8954966.262	22329	401.046		
Total	9910939.583	22355	443.343		

Table 10

Alaska State Assessment Information
Analysis of Variance Table
ITBS Composite Score by Grade Level, School Language Type and
Individual Student English Proficiency

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	1326801.392	7	189543.056	495.847	<0.001
Grade	17003.172	2	8501.586	22.240	<0.001
Std. English Prof.	207569.066	3	69189.689	181.001	<0.001
School Language	339313.645	2	169656.823	443.825	<0.001
2-Way Interactions	41615.997	16	2601.000	6.804	<0.001
Grade-Std. Eng. Prf.	2723.106	6	453.851	1.187	0.309
Grade-School Lang.	1466.979	4	366.745	0.959	0.429
Std. Eng. Prf.-Sch. Lang.	35939.994	6	5989.999	15.670	<0.001
3-Way Interactions	10456.874	12	871.406	2.280	0.007
Grade-Std. Eng. Prf.-Sch. Lang	10456.874	12	871.406	2.280	0.007
Explained	1378874.263	35	39396.408	103.062	<0.001
Residual	8532065.320	22320	382.261		
Total	9910939.583	22355	443.343		

"small school versus large school" does not seem nearly as important as the issue of community size. Students who attend school in rural areas in Alaska do not perform as well on standardized tests as their counterparts from small towns or larger urban centers. There is an interactive effect, with the school size potentially being a factor within the rural communities to the extent that, within the rural areas, students from small schools perform less well than students from medium or large sized schools. However, Table 6 showed that small schools in rural communities were primarily Non-English dominant schools. That is, the school size-community size issue may well be confounded with a language proficiency issue.

Examining the success of students based on their individual English proficiency versus the language dominance of the school they attend shows that English speakers do well regardless of the dominant language in the school. Both the Non-English speakers and the Influenced by Other Language English speakers perform much better in the English dominant schools than in the Non-English dominant or even the Influence dominant schools.

Interpreting the language variables as pseudo-indicators of cultural background, these data are implying that students from the dominant American culture perform relatively well regardless of where they attend school. Students from the non-dominant American culture do not perform as well as the dominant culture students but they perform better if they attend a dominant culture school rather than a non-dominant culture school. The English speakers in the Non-English dominant schools may well be the children of teachers or other professional governmental personnel stationed in a rural area. That is, they may well be dominant culture individuals imported into a non-dominant culture setting. Similarly, the Non-English speakers in the English dominant schools may well be individuals who are newly transferred into the dominant cultural setting from other cultural settings. However, there is no indication that the transfer was necessarily from rural Alaska. Many of the Non-English speakers in the English dominant schools are from Southeast Asian, Central and South American or European backgrounds. Many have rural Alaskan backgrounds. The differential performances among these groups, if any, can not be discerned from the current information base.

The differences in performance on the ITBS described above, when interpreted as culturally based, may well be documenting a "cultural bias" of the ITBS. It may also be documenting symptoms of the differences in life style and values between mainstream American cultural groups and rural Alaskan cultural groups. This latter possibility was examined further by examining the relationships among students' cultural background as indicated by their English language proficiency, their view as to the importance of education and their actual performance on the ITBS.

Students who sat for the ITBS as part of the Alaska Testing Program in 1989 were asked to complete a short questionnaire indicating some information about their study habits, attitudes and outside school activities. Three of the questions asked of all tested students were:

1. How important *do you think* it is to learn to read?
2. How important *do you think* it is to learn to write?
3. How important *do you think* it is to learn to do math?

Response choices provided for these questions were:

- Very Important
- Important

- Not too important
- Not at all important

The responses provided by students to this series of questions are tallied in Table 11, broken down by the individual student's English language proficiency as reported by the student's teacher. Table 12 provides an indication of the overall rating for each area by language proficiency by reporting a simple mean response based on a weighting of:

4 -- Very important

3 -- Important

2 -- Not too important

1 -- Not at all important

Students who did not indicate the importance of an area were not included in the calculation of the mean values presented in Table 12 for that area only. Figure 9 presents a graphic depiction of the relationship between language proficiency and the importance ratings described in Tables 11 and 12.

A majority of students, regardless of English proficiency, rated each of the areas as "Very Important" to learn. However, there do appear to be some differences in the relative ratings by different English proficient groups. English speakers provided the highest rating of importance in each content area. Non-English speakers provided the lowest importance rating in each content area. The ratings provided by students who were classified as influenced by another language were about half way between the ratings provided by English and non-English speakers.

English speakers rated both reading and writing as slightly more important than mathematics as subjects to be learned. The influenced categorized students rated reading as more important than mathematics but rated writing as slightly less important than mathematics. Non-English speakers rated mathematics as the most important of the three content areas, followed by reading and then writing.

The importance ratings within the language proficient groups may reflect success in school in an area or may reflect a more deeply seated cultural value system. In any case, the importance do carry a strong relationship to performance overall and within the language proficient groups.

Figure 10 provides a graphic depiction of the relationships among ITBS Reading Comprehension performance, the rating of importance for reading and the individual's English language proficiency. Figures 11 and 12 provide similar graphs for the ITBS Total Language Arts and Total Mathematics areas versus the importance of writing and the importance of mathematics broken down by English proficiency group. Tabular presentations of the mean values graphed in Figures 10 through 12 are provided in Tables 13 through 15. Tables 16 through 18 provide Analysis of Variance Tables identifying the significance of the relationships.

The relationship between language proficiency and performance on the ITBS had already been documented earlier. These data also document a strong relationship between the importance ratings and actual performances on the ITBS. This relationship seems to be fairly consistent across the English language proficient groups. That is, high importance ratings correspond to high test performances, and low importance ratings correspond to low test performances, regardless of language proficiency group.

Table 11

Alaska State Assessment Information
Ratings of Importance of Various Content Areas by
Individual Student's English Proficiency
(Percent of Group Choosing Each Importance Rating)

Importance Rating	Content Area	Individual's English Proficiency: Non-English	Influenced by Other	English	Not Recorded	Total
Very Important	Reading	59.6%	73.5%	85.8%	69.7%	81.7%
	Writing	55.7%	68.1%	81.4%	66.8%	77.4%
	Math	63.0%	68.4%	76.0%	61.3%	73.0%
Important	Reading	21.6%	16.5%	9.8%	11.1%	11.1%
	Writing	23.4%	20.7%	13.6%	13.2%	14.6%
	Math	20.4%	21.3%	18.3%	18.1%	18.7%
Not Too Important	Reading	8.9%	5.0%	1.0%	1.9%	1.9%
	Writing	10.6%	5.9%	1.7%	2.7%	2.5%
	Math	9.4%	5.3%	2.2%	3.4%	2.9%
Not at All Important	Reading	4.1%	1.7%	0.5%	0.9%	0.8%
	Writing	4.9%	1.9%	0.4%	1.1%	0.8%
	Math	1.8%	1.4%	0.6%	0.9%	0.8%
No Response	Reading	5.7%	3.4%	2.9%	16.4%	4.6%
	Writing	5.4%	3.4%	2.9%	16.3%	4.6%
	Math	5.4%	3.5%	2.9%	16.3%	4.6%
Number of Respondents		872	2,395	17,455	2,714	23,436

Table 12

Alaska State Assessment Information
Average Ratings of Importance for Content Areas by
Individual Student's English Language Proficiency

Content Area	Individual's English Proficiency: Non-English	Influenced by Other	English	Not Recorded	Total
Reading	3.45	3.67	3.86	3.79	3.82
Writing	3.37	3.60	3.81	3.74	3.77
Math	3.53	3.63	3.75	3.67	3.72

Figure 9

Interaction of Individual's English Proficiency and Individual's Rating of Importance for Education

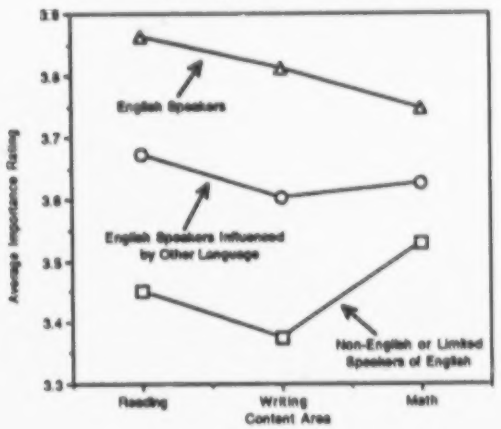

Figure 10

Relationship of Reading Comprehension Performance and Rating of Importance for Reading

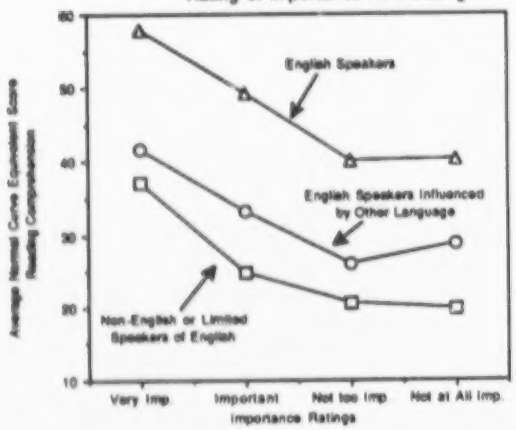

Figure 11

Relationship of Total Language Arts Performance and Rating of Importance for Writing

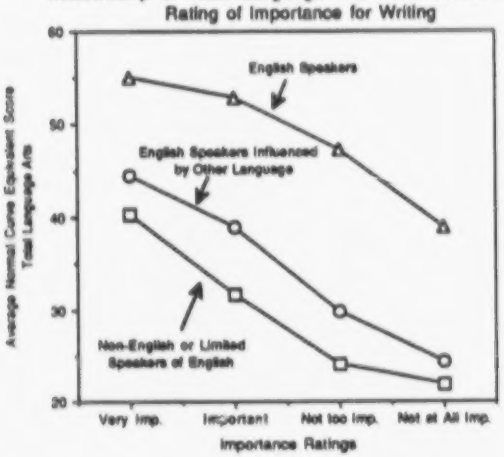

Figure 12

Relationship of Total Mathematics Performance and Rating of Importance for Mathematics

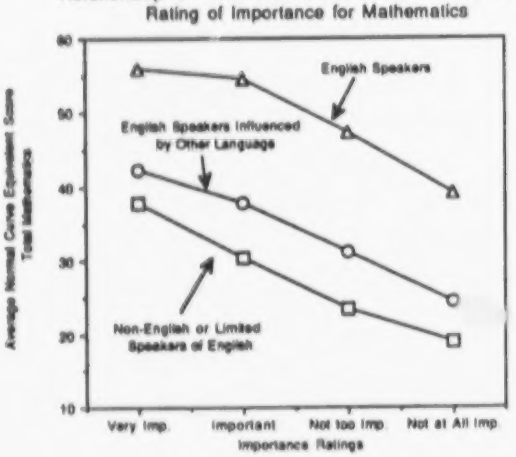

Table 13

Alaska State Assessment Information
Breakdown of ITBS Reading Comprehension Score (mean NCE) and
Number of Students Tested by Rating of Importance of Learning to Read
and Individual English Proficiency

Importance of Learning to Read	Individual English Proficiency				
	Non-English	Influenced by Other	English	Not Deisgnated	All
Very Important	37.19	41.69	57.81	50.04	55.00
	512	1,753	14,887	1,883	19,035
Important	24.83	33.23	49.30	40.66	44.10
	187	390	1,705	299	2,581
Not too Important	20.53	25.97	40.02	30.71	31.61
	78	117	187	51	433
Not at all Important	19.72	28.74	40.19	21.52	30.98
	36	38	79	25	178
No Response	25.13	30.93	48.55	45.86	45.03
	45	74	448	429	996
All Respondents	31.61	38.98	56.46	47.69	52.74
	858	2,372	17,306	2,687	23,223

Table 14

Alaska State Assessment Information
Breakdown of ITBS Total Language Arts Score (mean NCE) and
Number of Students Tested by Rating of Importance of Learning to Write
and Individual English Proficiency

Importance of Learning to Write	Individual English Proficiency				
	Non-English	Influenced by Other	English	Not Deisgnated	All
Very Important	40.29	44.42	54.99	48.33	53.00
	458	1,597	13,967	1,784	17,806
Important	31.61	38.92	52.93	43.15	48.71
	186	483	2,336	349	3,354
Not too Important	24.08	29.81	47.21	36.91	38.57
	86	128	286	64	564
Not at all Important	21.88	24.33	38.90	28.93	30.15
	43	43	73	27	186
No Response	33.13	34.65	46.71	44.07	44.17
	40	68	448	422	978
All Respondents	35.26	41.81	54.29	46.49	51.45
	813	2,319	17,110	2,646	22,888

Table 15

Alaska State Assessment Information
Breakdown of ITBS Total Mathematics Score (mean NCE) and
Number of Students Tested by Rating of Importance of Learning Math
and Individual English Proficiency

Importance of Learning Math	Individual English Proficiency				
	Non-English	Influenced by Other	English	Not Deisgnated	All
Very Important	37.77 534	42.39 1,596	55.96 13,046	48.70 1,652	53.38 16.828
Important	30.36 173	37.88 492	54.57 3,146	46.85 480	50.82 4.291
Not too Important	23.36 80	31.13 124	47.35 377	33.30 88	39.63 669
Not at all Important	19.00 16	24.34 32	39.16 99	27.60 25	32.85 172
No Response	30.05 38	31.30 74	47.30 438	46.75 411	45.15 961
All Respondents	34.17 841	40.22 2,318	55.20 17,106	47.35 2,656	52.00 22,921

Table 16

Alaska State Assessment Information
Analysis of Variance Table
ITBS Reading Comprehension Score by Importance of Reading Rating by
English Proficiency Classification

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	1493832	7	213404.551	521.435	<0.001
Importance of Reading	354122	4	88530.414	216.316	<0.001
Std. English Prf.	866971	3	288990.255	706.121	<0.001
2-Way Interactions	13706	12	1142.137	2.791	0.001
Imp. of Read.- Std. Eng. Prf.	13706	12	1142.137	2.791	0.001
Explained	1507537	19	79344.079	193.870	<0.001
Residual	9496158	23203	409.264		
Total	11003696	23222	473.848		

Table 17

Alaska State Assessment Information
Analysis of Variance Table
ITBS Total Language Arts Score by Importance of Writing Rating by
English Proficiency Classification

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	790521.043	7	112931.578	295.754	<0.001
Importance of Writing	158594.319	4	39648.580	103.835	<0.001
Std. English Prf.	492875.543	3	164291.848	430.260	<0.001
2-Way Interactions	19312.973	12	1609.414	4.215	<0.001
Imp. of Writing-Std. Eng. Prf.	19312.973	12	1609.414	4.215	<0.001
Explained	809834.016	19	42622.843	111.624	<0.001
Residual	8731981.276	22868	381.843		
Total	9541815.292	22887	416.910		

Table 18

Alaska State Assessment Information
Analysis of Variance Table
ITBS Total Mathematics Score by Importance of Math Rating by
English Proficiency Classification

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	971622	7	138803.165	341.079	<0.001
Importance of Math	150464	4	37615.984	92.433	<0.001
Std. English Prf.	722788	3	240929.447	592.032	<0.001
2-Way Interactions	22266	12	1855.494	4.559	<0.001
Importance of Math-Std. Eng. Prf.	22266	12	1855.494	4.559	<0.001
Explained	993888	19	52309.899	128.540	<0.001
Residual	9319635	22901	406.953		
Total	10313523	22920	449.979		

English speakers, representatives of the dominant cultural group, perform better on the ITBS than do non-English speakers, representatives of non-dominant cultural groups. English speakers tend to place more importance on learning school subjects than do non-English speakers. A strong positive relationship exists between rating of importance of a subject and performance on the corresponding portion of the ITBS. Perhaps cultural values are reflected in the importance ratings which are translated in part into the performance levels of the individual students. Other factors are most assuredly present which account for the differences in the overall level of performance among the English proficient groups, even when the importance ratings are taken into account. Identification and examination of those factors will be left to other studies.

Concluding Editorials

The 1989-90 Alaska Statewide Assessment is now history. For the first time, students across Alaskan schools and districts were tested with the same norm-referenced test, in the same grade levels at the same time of the year. Specially developed tests for the state had been used in the past, but this year's activities marked the first time that the state used an instrument allowing comparisons to an outside population and the first time that the state actually released district-by-district results on the state assessment.

The state also developed a series of questionnaires to be completed coincident with the administration of the ITBS to students across the state. One instrument was to be completed by building principals. It described the climate, philosophy and problems of the school unit. Teachers were asked to provide some information about individual students; special needs, ethnicity and bilingualism. Students were asked to identify some characteristics about themselves such as study habits, outside school habits and attitudes toward some school subjects.

The information collected through the State Assessment was initially summarized by the State Department of Education. It and other descriptive data about schools and districts in Alaska were subjected to further analysis and review in this paper. The questions then are, "So what? What insights has the State Assessment Program in 1989-90 provided as to the nature of education of Alaska? Where should the State Assessment Program go from here?"

Answers to some of these questions follow. The 1989-90 State Assessment Program provided information as to the status of education in Alaska. However, the current analyses of State Assessment results leave a number of questions unanswered which might be appropriately addressed through future assessment activities or through other, smaller scaled research opportunities. The very existence of the Alaska Assessment Program also raises some policy issues or concerns which will not be answered by research results but which will tax the collective wisdom of the state's education policy makers in the legislature, State Board of Education and other political entities around the state. Some of these issues are identified below.

Summary of Findings

The major findings from the 1989-90 State Assessment Program, to now, are:

1. At the broadest level, the results of the State Assessment Program in 1989-90 documented the status of education of Alaskan youth, at least as relates to the acquisition of basic skills. At the state level, the results from the assessment indicate that Alaska is much like the national population as reflected by the 1984 norm group for the ITBS. **Average performance levels of Alaskan youth were similar to or slightly above those of the norm group for the ITBS.** This result has to be somewhat satisfying to the citizens of the state, given the geographic isolation and remoteness of Alaska from the rest of the country.

2. The State Department of Education's report of the results of the 1989-90 testing program documents the **wide variance in performance levels across the districts in the state.** When district average performance levels are converted to scores on the individual student percentile scale, there are some districts in the state whose performance levels are consistently in the upper 60's and 70's. There are also districts whose corresponding individual percentile ranks are all single digits.

3. The analyses in this paper indicate that the **size of school**, at least for upper elementary and middle grade students, **is not the primary determinant of**

basic skills achievement. There seems to be a strong interaction among school size, community size and community culture.

4. The results of the assessment **confirm the close relationships between English linguistic skills of the students, the cultural expectations of the community and the level of student attainment** in the basic skills areas. This relationship had been previously identified by Kleinfeld, Barnhardt, McDiarmid, Esmilka and others cited earlier. The State Assessment results provide confirmation of their observations across a large student population, some 23,000 plus, covering the entire state with achievement measured on a common metric.

5. The relationships between State Assessment results and resource consumption information about districts in Alaska show that even **large sums of money and low pupil-teacher ratios have not obviated the achievement differences across the cultural groups in the state.**

These State Assessment results should be met with neither shouts of exceeding joy nor cries of remorse and despair. They are primarily status results which establish a baseline from which future performance may be measured.

Similarly, the resource-achievement relationship is simply a statement of current status. The relationship between resource consumption and achievement should be interpreted as neither a call for reductions in current levels of support nor as a call for additional support. The confounding issues of cultural expectations and diverse values overwhelm the resource-achievement relationship. Performances may have been much worse if expenditures had been lower or PTR's higher. We do not know based on the current levels of information. We do know that the achievement differences exist despite differences in support and PTR across districts. Perhaps more effort should be expended on understanding the causes of these differences before major adjustments, either upward or downward, are made in the current support levels for education in Alaska.

Future Research

Several questions related to education in Alaska still persist or have been raised as a result of this review of the 1989-90 State Assessment Program. Some of these issues or questions may be addressed through further reviews of the current data bases, some may be addressed through future statewide assessment activities and some may require activities beyond the State Assessment Program. Potential research questions identified by the authors include:

1. Are there particular subsections or items on the Iowa Tests of Basic Skills, Form G, which differentiate among the state's cultural groups in a manner inconsistent with the overall performance differences? If so, are these differences a reflection of a technical problem with the instruments or do they help us understand the status of education in Alaska?

2. Are the methods of determining English language proficiency consistent across the districts in the state? That is, would an English proficient student in Tukumgnailguq School in the Yupiit District be classified as an English proficient student in Harbor View School in the Juneau School District?

3. Are the differences in ratings of importance of various school subjects identified above true cultural traits or are they merely artifacts of the students' current and historical success in the content areas in school?

4. What, if any, relationship exists between the cultural background of the teacher, the dominant culture of the community, the students' characteristics and the students' achievement patterns? If such a relationship exists, does it vary in different cultural or community settings?

5. Aside from the obvious size and community differences, how do small schools in rural Alaska differ from large schools in urban Alaska? How do small schools in rural Alaska differ from schools elsewhere? Are there identifiable differences in curricular content or educational practice which differentiate small, rural Alaskan schools from other schools in the state or country?

6. There are students in Alaska from all backgrounds who performed well on the Iowa Tests of Basic Skills administered in October 1989. There were students from all backgrounds who performed poorly. What are the characteristics of the high performing students and their schools? What are the characteristics of the low performing students and their schools?

This set of research questions is not deemed exhaustive. However, perhaps some of them can provide insight and direction to future assessment activities in the state or to other research activities devoted to understanding the status of education in Alaska.

Policy Issues

The primary reason for the existence of the Alaska State Assessment Program is to provide information to policy makers in the state relative to the status of education in the state. The State Assessment Program has fulfilled that goal for 1989-90 through the release of the district-by-district profile report. The existence of that report and its use have raised a number of policy issues which must be addressed, either overtly or covertly, by the policy makers in the state. Among the issues raised are:

1. What are the roles of the differing levels of policy makers; governor's office, legislature, state board of education and local boards of education; in making judgements about performance and determining educational goals and standards in Alaska?

2. Is the ITBS an appropriate measure of educational attainment in Alaska in general and in the rural, native community in particular? If not, is there a single measure or set of measures which would be appropriate on a statewide basis?

3. Is the traditional, American educational enterprise an appropriate experience for the students in rural Alaska? If not, how should it be modified for the native Alaskan student? Should it be totally eliminated in favor of some other model for the provision of education?

4. What is the efficacy of the small, rural schools in Alaska if "traditional" academic attainment is the primary goal of the educational enterprise? Should small, rural schools serving linguistically and culturally different populations be held to the same academic standards that are acceptable in larger urban centers?

5. Should the State Assessment Program be continued? If so, should any rewards or sanctions be related to performance levels on the Assessment Program?

6. Assuming the continuance of the State Assessment Program, how should the state and local personnel administering the program insure fair compliance and avoid the possibilities of "cheating"?

7. What can policy makers at the state and district level actually do to improve the quality of education in Alaska?

These issues are left for the political process to sort out through the state and local governing boards. Resolutions to these issues may well shape the future directions for the State Assessment Program in Alaska.

Overall, the implementation of the Alaska State Assessment Program in 1989-90 was successful. A set of baseline, consistent information has been developed for the schools and school districts in the state. In one sense, the Alaska State Assessment Program is just another state testing program, providing information of interest to local district and state personnel but of little interest to others. In another sense, the Alaska State Assessment Program is far from just another state assessment program. It is a program which tests all Alaskan students, providing a data base on a culturally diverse population. It is that aspect of the Alaska State Assessment Program which makes it somewhat unique and potentially of interest to individuals outside the state.

Appendix A

Alaska State Assessment Program

Sixth Grade Answer Sheet, Student Questionnaire

and Teacher Questionnaire

Iowa Tests of Basic Skills®

Published by THE RIVERSIDE PUBLISHING COMPANY

Form G, H, or J
MRC Answer Sheet

9-50511

LEVEL **12**

TEST V: VOCABULARY

0	① ② ● ④														
39	① ② ③ ④	45	① ② ③ ④	51	① ② ③ ④	57	① ② ③ ④	63	① ② ③ ④	69	① ② ③ ④	75	① ② ③ ④		
40	① ② ③ ④	46	① ② ③ ④	52	① ② ③ ④	58	① ② ③ ④	64	① ② ③ ④	70	① ② ③ ④	76	① ② ③ ④		
41	① ② ③ ④	47	① ② ③ ④	53	① ② ③ ④	59	① ② ③ ④	65	① ② ③ ④	71	① ② ③ ④	77	① ② ③ ④		
42	① ② ③ ④	48	① ② ③ ④	54	① ② ③ ④	60	① ② ③ ④	66	① ② ③ ④	72	① ② ③ ④	78	① ② ③ ④		
43	① ② ③ ④	49	① ② ③ ④	55	① ② ③ ④	61	① ② ③ ④	67	① ② ③ ④	73	① ② ③ ④	79	① ② ③ ④		
44	① ② ③ ④	50	① ② ③ ④	56	① ② ③ ④	62	① ② ③ ④	68	① ② ③ ④	74	① ② ③ ④				

TEST R: READING

45	① ② ③ ④	52	① ② ③ ④	59	① ② ③ ④	66	① ② ③ ④	73	① ② ③ ④	80	① ② ③ ④	87	① ② ③ ④	94	① ② ③ ④
46	① ② ③ ④	53	① ② ③ ④	60	① ② ③ ④	67	① ② ③ ④	74	① ② ③ ④	81	① ② ③ ④	88	① ② ③ ④	95	① ② ③ ④
47	① ② ③ ④	54	① ② ③ ④	61	① ② ③ ④	68	① ② ③ ④	75	① ② ③ ④	82	① ② ③ ④	89	① ② ③ ④	96	① ② ③ ④
48	① ② ③ ④	55	① ② ③ ④	62	① ② ③ ④	69	① ② ③ ④	76	① ② ③ ④	83	① ② ③ ④	90	① ② ③ ④	97	① ② ③ ④
49	① ② ③ ④	56	① ② ③ ④	63	① ② ③ ④	70	① ② ③ ④	77	① ② ③ ④	84	① ② ③ ④	91	① ② ③ ④	98	① ② ③ ④
50	① ② ③ ④	57	① ② ③ ④	64	① ② ③ ④	71	① ② ③ ④	78	① ② ③ ④	85	① ② ③ ④	92	① ② ③ ④	99	① ② ③ ④
51	① ② ③ ④	58	① ② ③ ④	65	① ② ③ ④	72	① ② ③ ④	79	① ② ③ ④	86	① ② ③ ④	93	① ② ③ ④	100	① ② ③ ④

TEST L-1: SPELLING

39	① ② ③ ④	45	① ② ③ ④	51	① ② ③ ④	57	① ② ③ ④	63	① ② ③ ④	69	① ② ③ ④	75	① ② ③ ④		
40	① ② ③ ④	46	① ② ③ ④	52	① ② ③ ④	58	① ② ③ ④	64	① ② ③ ④	70	① ② ③ ④	76	① ② ③ ④		
41	① ② ③ ④	47	① ② ③ ④	53	① ② ③ ④	59	① ② ③ ④	65	① ② ③ ④	71	① ② ③ ④	77	① ② ③ ④		
42	① ② ③ ④	48	① ② ③ ④	54	① ② ③ ④	60	① ② ③ ④	66	① ② ③ ④	72	① ② ③ ④	78	① ② ③ ④		
43	① ② ③ ④	49	① ② ③ ④	55	① ② ③ ④	61	① ② ③ ④	67	① ② ③ ④	73	① ② ③ ④	79	① ② ③ ④		
44	① ② ③ ④	50	① ② ③ ④	56	① ② ③ ④	62	① ② ③ ④	68	① ② ③ ④	74	① ② ③ ④				

TEST L-2: CAPITALIZATION

29	① ② ③ ④	33	① ② ③ ④	37	① ② ③ ④	41	① ② ③ ④	45	① ② ③ ④	49	① ② ③ ④	53	① ② ③ ④	57	① ② ③ ④
30	① ② ③ ④	34	① ② ③ ④	38	① ② ③ ④	42	① ② ③ ④	46	① ② ③ ④	50	① ② ③ ④	54	① ② ③ ④	58	① ② ③ ④
31	① ② ③ ④	35	① ② ③ ④	39	① ② ③ ④	43	① ② ③ ④	47	① ② ③ ④	51	① ② ③ ④	55	① ② ③ ④		
32	① ② ③ ④	36	① ② ③ ④	40	① ② ③ ④	44	① ② ③ ④	48	① ② ③ ④	52	① ② ③ ④	56	① ② ③ ④		

TEST L-3: PUNCTUATION

29	① ② ③ ④	33	① ② ③ ④	37	① ② ③ ④	41	① ② ③ ④	45	① ② ③ ④	49	① ② ③ ④	53	① ② ③ ④	57	① ② ③ ④
30	① ② ③ ④	34	① ② ③ ④	38	① ② ③ ④	42	① ② ③ ④	46	① ② ③ ④	50	① ② ③ ④	54	① ② ③ ④	58	① ② ③ ④
31	① ② ③ ④	35	① ② ③ ④	39	① ② ③ ④	43	① ② ③ ④	47	① ② ③ ④	51	① ② ③ ④	55	① ② ③ ④		
32	① ② ③ ④	36	① ② ③ ④	40	① ② ③ ④	44	① ② ③ ④	48	① ② ③ ④	52	① ② ③ ④	56	① ② ③ ④		

TEST L-4: USAGE AND EXPRESSION

Part 1		25	① ② ③ ④	31	① ② ③ ④	37	① ② ③ ④	Part 2		75	① ② ③ ④	81	① ② ③ ④	87	① ② ③ ④
		26	① ② ③ ④	32	① ② ③ ④	38	① ② ③ ④			76	① ② ③ ④	82	① ② ③ ④	88	① ② ③ ④
21	① ② ③ ④	27	① ② ③ ④	33	① ② ③ ④	39	① ② ③ ④	71	① ② ③ ④	77	① ② ③ ④	83	① ② ③ ④		
22	① ② ③ ④	28	① ② ③ ④	34	① ② ③ ④	40	① ② ③ ④	72	① ② ③ ④	78	① ② ③ ④	84	① ② ③ ④		
23	① ② ③ ④	29	① ② ③ ④	35	① ② ③ ④	41	① ② ③ ④	73	① ② ③ ④	79	① ② ③ ④	85	① ② ③ ④		
24	① ② ③ ④	30	① ② ③ ④	36	① ② ③ ④	42	① ② ③ ④	74	① ② ③ ④	80	① ② ③ ④	86	① ② ③ ④		

TEST W-1: VISUAL MATERIALS

42	① ② ③ ④	48	① ② ③ ④	54	① ② ③ ④	60	① ② ③ ④	66	① ② ③ ④	72	① ② ③ ④	78	① ② ③ ④	84	① ② ③ ④
43	① ② ③ ④	49	① ② ③ ④	55	① ② ③ ④	61	① ② ③ ④	67	① ② ③ ④	73	① ② ③ ④	79	① ② ③ ④	85	① ② ③ ④
44	① ② ③ ④	50	① ② ③ ④	56	① ② ③ ④	62	① ② ③ ④	68	① ② ③ ④	74	① ② ③ ④	80	① ② ③ ④	86	① ② ③ ④
45	① ② ③ ④	51	① ② ③ ④	57	① ② ③ ④	63	① ② ③ ④	69	① ② ③ ④	75	① ② ③ ④	81	① ② ③ ④		
46	① ② ③ ④	52	① ② ③ ④	58	① ② ③ ④	64	① ② ③ ④	70	① ② ③ ④	76	① ② ③ ④	82	① ② ③ ④		
47	① ② ③ ④	53	① ② ③ ④	59	① ② ③ ④	65	① ② ③ ④	71	① ② ③ ④	77	① ② ③ ④	83	① ② ③ ④		

TEST W-2: REFERENCE MATERIALS

34	① ② ③ ④	40	① ② ③ ④	46	① ② ③ ④	52	① ② ③ ④	58	① ② ③ ④	64	① ② ③ ④	70	① ② ③ ④		
35	① ② ③ ④	41	① ② ③ ④	47	① ② ③ ④	53	① ② ③ ④	59	① ② ③ ④	65	① ② ③ ④	71	① ② ③ ④		
36	① ② ③ ④	42	① ② ③ ④	48	① ② ③ ④	54	① ② ③ ④	60	① ② ③ ④	66	① ② ③ ④	72	① ② ③ ④		
37	① ② ③ ④	43	① ② ③ ④	49	① ② ③ ④	55	① ② ③ ④	61	① ② ③ ④	67	① ② ③ ④	73	① ② ③ ④		
38	① ② ③ ④	44	① ② ③ ④	50	① ② ③ ④	56	① ② ③ ④	62	① ② ③ ④	68	① ② ③ ④	74	① ② ③ ④		
39	① ② ③ ④	45	① ② ③ ④	51	① ② ③ ④	57	① ② ③ ④	63	① ② ③ ④	69	① ② ③ ④				

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Alaska Department of Education

GRADE 6

Form G, H, or J

MRC Answer Sheet

LEVEL 12

TEST M-1: MATHEMATICS CONCEPTS

45 ①②③④	52 ①②③④	59 ①②③④	66 ①②③④	73 ①②③④	80 ①②③④
46 ①②③④	53 ①②③④	60 ①②③④	67 ①②③④	74 ①②③④	81 ①②③④
47 ①②③④	54 ①②③④	61 ①②③④	68 ①②③④	75 ①②③④	82 ①②③④
48 ①②③④	55 ①②③④	62 ①②③④	69 ①②③④	76 ①②③④	83 ①②③④
49 ①②③④	56 ①②③④	63 ①②③④	70 ①②③④	77 ①②③④	
50 ①②③④	57 ①②③④	64 ①②③④	71 ①②③④	78 ①②③④	
51 ①②③④	58 ①②③④	65 ①②③④	72 ①②③④	79 ①②③④	

TEST M-2: MATHEMATICS PROBLEMS

30 ①②③④	35 ①②③④	40 ①②③④	45 ①②③④	50 ①②③④	55 ①②③④
31 ①②③④	36 ①②③④	41 ①②③④	46 ①②③④	51 ①②③④	56 ①②③④
32 ①②③④	37 ①②③④	42 ①②③④	47 ①②③④	52 ①②③④	57 ①②③④
33 ①②③④	38 ①②③④	43 ①②③④	48 ①②③④	53 ①②③④	58 ①②③④
34 ①②③④	39 ①②③④	44 ①②③④	49 ①②③④	54 ①②③④	

TEST M-3: MATHEMATICS COMPUTATION

54 ①②③④	61 ①②③④	68 ①②③④	75 ①②③④	82 ①②③④	89 ①②③④
55 ①②③④	62 ①②③④	69 ①②③④	76 ①②③④	83 ①②③④	90 ①②③④
56 ①②③④	63 ①②③④	70 ①②③④	77 ①②③④	84 ①②③④	91 ①②③④
57 ①②③④	64 ①②③④	71 ①②③④	78 ①②③④	85 ①②③④	92 ①②③④
58 ①②③④	65 ①②③④	72 ①②③④	79 ①②③④	86 ①②③④	93 ①②③④
59 ①②③④	66 ①②③④	73 ①②③④	80 ①②③④	87 ①②③④	94 ①②③④
60 ①②③④	67 ①②③④	74 ①②③④	81 ①②③④	88 ①②③④	

TEST SS: SOCIAL STUDIES

43 ①②③④	51 ①②③④	59 ①②③④	67 ①②③④	75 ①②③④	83 ①②③④
44 ①②③④	52 ①②③④	60 ①②③④	68 ①②③④	76 ①②③④	84 ①②③④
45 ①②③④	53 ①②③④	61 ①②③④	69 ①②③④	77 ①②③④	85 ①②③④
46 ①②③④	54 ①②③④	62 ①②③④	70 ①②③④	78 ①②③④	
47 ①②③④	55 ①②③④	63 ①②③④	71 ①②③④	79 ①②③④	
48 ①②③④	56 ①②③④	64 ①②③④	72 ①②③④	80 ①②③④	
49 ①②③④	57 ①②③④	65 ①②③④	73 ①②③④	81 ①②③④	
50 ①②③④	58 ①②③④	66 ①②③④	74 ①②③④	82 ①②③④	

TEST SC: SCIENCE

43 ①②③④	55 ①②③④	67 ①②③④	79 ①②③④
44 ①②③④	56 ①②③④	68 ①②③④	80 ①②③④
45 ①②③④	57 ①②③④	69 ①②③④	81 ①②③④
46 ①②③④	58 ①②③④	70 ①②③④	82 ①②③④
47 ①②③④	59 ①②③④	71 ①②③④	83 ①②③④
48 ①②③④	60 ①②③④	72 ①②③④	84 ①②③④
49 ①②③④	61 ①②③④	73 ①②③④	85 ①②③④
50 ①②③④	62 ①②③④	74 ①②③④	
51 ①②③④	63 ①②③④	75 ①②③④	
52 ①②③④	64 ①②③④	76 ①②③④	
53 ①②③④	65 ①②③④	77 ①②③④	
54 ①②③④	66 ①②③④	78 ①②③④	

SPECIAL CLASS REPORTS: CLASS A, CLASS B, CLASS C, CLASS D — Yes / No

STUDENT I.D. NUMBER: 10 9 8 7 6 5 4 3 2 1

Chapter 1: (F) (M) — Reading (E) (M) — Math (E) (M) — Lang (E) (M) — Other (E) (M)

OTHER INFORMATION: FIELD 4, FIELD 3, FIELD 2 — 10 9 8 7 6 5 4 3 2 1

GROUP: 1

DATE OF BIRTH: YEAR; MONTH: JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC

SEX: Male, Female

FIRST NAME

LAST NAME

FILL IN THESE BLANKS • PLEASE PRINT

(Place scannable label here.)

Teacher _____ Test Form _____

School _____ Grade _____

City (System) _____ Sex _____

Turn the sheet on its side; then print your name in these boxes

ALASKA STATEWIDE STUDENT TESTING PROGRAM GRADE 6

STUDENT QUESTIONNAIRE

Alaska Department of Education

1. I have gone to school in this school district all the time since

- ○ 1st Grade or earlier
- ○ 2nd Grade
- ○ 3rd Grade
- ○ 4th Grade
- ○ 5th Grade
- ○ 6th Grade

2. When you were younger, did you go to any of these?

a. Kindergarten
- ○ Yes
- ○ No
- ○ I don't know

b. Preschool, nursery school, or Head Start
- ○ Yes
- ○ No
- ○ I don't know

3. About how many days were you absent from school last year (1988-89)?

- ○ Never absent
- ○ Less than 10 days
- ○ 11 to 20 days
- ○ More than 20 days

4. How often were you late to school last year (1988-89)?

- ○ Never tardy
- ○ Less than 10 days
- ○ 11 to 20 days
- ○ More than 20 days

5. Do you think you need extra help in reading *to keep up with your class*?

- ○ Most of the time
- ○ Some of the time
- ○ Not very often
- ○ Never

6. Do you think you need extra help in math *to keep up with your class*?

- ○ Most of the time
- ○ Some of the time
- ○ Not very often
- ○ Never

7. Do you think you need extra help in writing stories or reports *to keep up with your class*?

- ○ Most of the time
- ○ Some of the time
- ○ Not very often
- ○ Never

8. Do you like math?

- ○ A lot
- ○ Some
- ○ A little
- ○ None

9. Do you like reading?

- ○ A lot
- ○ Some
- ○ A little
- ○ None

10. Do you like writing (stories or poems or reports)?

- ○ A lot
- ○ Some
- ○ A little
- ○ None

11. How important *do you think* it is to learn to do math?

- ○ Very important
- ○ Important
- ○ Not too important
- ○ Not at all important

12. How important *do you think* it is to learn to read?

- ○ Very important
- ○ Important
- ○ Not too important
- ○ Not at all important

13. How important *do you think* it is to learn to write?

- ○ Very important
- ○ Important
- ○ Not too important
- ○ Not at all important

14. How often do you use calculators in school?

- ○ Almost every day
- ○ Once or twice a week
- ○ Once or twice a month
- ○ Never or hardly ever

15. How often do you use computers to work with numbers in school?

- ○ Almost every day
- ○ Once or twice a week
- ○ Once or twice a month
- ○ Never or hardly ever

16. How often do you use computers for reading or writing in school?

- ○ Almost every day
- ○ Once or twice a week
- ○ Once or twice a month
- ○ Never or hardly ever

17. How often do you have free-choice silent reading (SSR) in school?

- ○ Almost every day
- ○ Once or twice a week
- ○ Once or twice a month
- ○ Never or hardly ever

18. How often do you do each of the following when you study to learn something or to get ready for a test?

a. Read the material over a few times
- ○ Most of the time
- ○ Part of the time
- ○ Never or hardly ever

b. Take notes or make outlines of what you read
- ○ Most of the time
- ○ Part of the time
- ○ Never or hardly ever

c. *Try to* answer the questions from the textbook
- ○ Most of the time
- ○ Part of the time
- ○ Never or hardly ever

d. *Try to* answer questions that you make up
- ○ Most of the time
- ○ Part of the time
- ○ Never or hardly ever

e. Work with somebody else and ask each other questions
- ○ Most of the time
- ○ Part of the time
- ○ Never or hardly ever

19. Outside of school, how often do you read things like books, magazines, newspapers, or comic books?
- ○ Almost every day
- ○ Once or twice a week
- ○ Once or twice a month
- ○ Never or hardly ever

20. About how much time do you watch TV or play video arcade games outside of school each day?
- ○ None or almost none
- ○ About half an hour
- ○ About 1 hour
- ○ 1 to 2 hours
- ○ 2 hours or more

21. About how much time do you spend on homework each day?
- ○ None or almost none
- ○ About half an hour
- ○ About 1 hour
- ○ 1 to 2 hours
- ○ 2 hours or more

22. About how much time each day do you use computers outside of school for something besides playing video arcade games?
- ○ None or almost none
- ○ About half an hour
- ○ About 1 hour
- ○ 1 to 2 hours
- ○ 2 hours or more

23. What are your educational plans for the future? (Mark *one* only.)
- ○ Don't plan to graduate from high school
- ○ High school graduation
- ○ Vocational, trade, or business school
- ○ College
- ○ More than college or an advanced degree, such as Law or Medicine
- ○ Don't know yet

STOP

To the Teacher

Carefully read the Questionnaire section in the special *Teacher's Instructions* for the Alaska program before you complete this section of the questionnaire. You will find complete information about how each category is to be marked.

I. Racial-Ethnicity. Mark the one racial-ethnic group that best describes the student.
- ○ Alaskan Native
- ○ American Indian
- ○ Asian-Pacific Islander
- ○ Black, not Hispanic
- ○ Hispanic
- ○ White

II. Special Programs. Mark the Yes or No circle for each special program listed below.

Yes	No	
○	○	Chapter 1
○	○	Migrant Education
○	○	Special Education–Handicapped
○	○	Special Education–Gifted
○	○	Correspondence Study

III. Bilingualism. Mark the one category of language dominance that best describes the student.
- ○ Exclusively a language other than English
- ○ Mostly a language other than English
- ○ Non-English and English spoken with equal ease
- ○ Mostly English, but also speaks another language
- ○ English that reflects the grammatical structure of another language
- ○ English exclusively and not the category above

Appendix B

Alaska State Assessment Program

Principals' Questionnaire

BUILDING QUESTIONNAIRE
ALASKA STATEWIDE STUDENT TESTING PROGRAM

Alaska Department of Education

1. Please mark the lowest and the highest grades included in your school.

Lowest ○○○○○○○○○○○○○
P K 1 2 3 4 5 6 7 8 9 10 11 12
Highest ○○○○○○○○○○○○○

2. On the average, what percent of the students in your school are absent each day? (Mark one)
- ○ 0%
- ○ 1-2%
- ○ 3-4%
- ○ 5-6%
- ○ More than 6%

3. On the average, what percent of the students in your school fail two or more classes or are retained at grade level each year? (Mark one)
- ○ 0%
- ○ Less than 1%
- ○ 1-2%
- ○ 3-5%
- ○ 6-10%
- ○ 11-20%
- ○ More than 20%

4. Considering only those certificated staff with regular classroom assignments, what is the typical number of students enrolled per class in your school? (Mark one)
- ○ Fewer than 10 students
- ○ 11-15 students
- ○ 16-20 students
- ○ 21-25 students
- ○ 26-30 students
- ○ 31-35 students
- ○ More than 35 students

5. Counting this year, what percent of the teaching staff is new to your school within the last three years? (Mark one)
- ○ 0%
- ○ 1-10%
- ○ 11-20%
- ○ 21-30%
- ○ 31-40%
- ○ 41-50%
- ○ 51-75%
- ○ More than 75%
- ○ School is 3 or fewer years old

6. During the past school year, what was the average or typical number of days teachers were absent from their classrooms for any reason? (Mark one)
- ○ 0 days
- ○ 1-2 days
- ○ 3-4 days
- ○ 5-10 days
- ○ 11-15 days
- ○ More than 15 days

7. How many years has the principal been at this school as principal? (Mark one)
- ○ Less than 1 year
- ○ 1 year
- ○ 2 years
- ○ 3 years
- ○ 4 years
- ○ 5 years
- ○ More than 5 years

8. What is the typical number of grades in a class in your building?
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more

9. What percentage of the students in your school actively participate in extracurricular activities?
- ○ 1-25%
- ○ 26-50%
- ○ 51-75%
- ○ More than 75%

A. Listed below are a number of strategies designed to improve learning. Please indicate which of these your school has had in operation since the 1988-89 school year.

	YES	NO
1. Instruction of students in study skills	○	○
2. Policy/guidelines on amount of required homework	○	○
3. Special recognition for academically outstanding students (besides honor roll)	○	○
4. Financial recognition for outstanding teachers	○	○
5. Nonfinancial recognition for outstanding teachers	○	○
6. Program to reduce student absenteeism or tardiness	○	○
7. Measures to reduce administrative burden on teachers	○	○

B. Indicate if each of the staff development or instructional strategies listed below is used in your building a lot (A LOT), some (SOME), a little (LITTLE), or None/Not Aware (NO).

	A LOT	SOME	LITTLE	NO
1. Peer coaching	○	○	○	○
2. Publishing and displaying student works	○	○	○	○
3. Use of math manipulatives in elementary grades	○	○	○	○
4. Use of math manipulatives in intermediate grades	○	○	○	○
5. Student cooperative learning groups	○	○	○	○
6. Computer enhanced instruction	○	○	○	○
7. Process approach to teaching writing	○	○	○	○
8. Content area reading	○	○	○	○
9. Inquiry or discussion approach in science	○	○	○	○
10. Literature-based reading	○	○	○	○
11. Problem-solving approach to instruction	○	○	○	○
12. Calculators used in instruction	○	○	○	○

C. Below is a list of school problems. To what degree do they impact your school? (For each item, principals will choose one of the following: serious, moderate, minor, or not a problem)

	SERIOUS	MODERATE	MINOR	NOT A PROBLEM
1. Student absenteeism	○	○	○	○
2. Lack of parent interest	○	○	○	○
3. Discipline	○	○	○	○
4. Lack of teacher commitment or motivation	○	○	○	○
5. Teacher absenteeism	○	○	○	○
6. Teacher turnover	○	○	○	○
7. Low standards for students	○	○	○	○
8. Inadequate materials and equipment	○	○	○	○
9. Class size	○	○	○	○
10. Vandalism, robbery, or theft	○	○	○	○
11. Physical assault among students	○	○	○	○
12. Student use of drugs or alcohol	○	○	○	○

Appendix C

Alaska State Assessment Program

State Report Profiles for Alaska as a Whole,

a High Scoring District (Railbelt) and

a Low Scoring District (Yupiit)

Alaska State Total

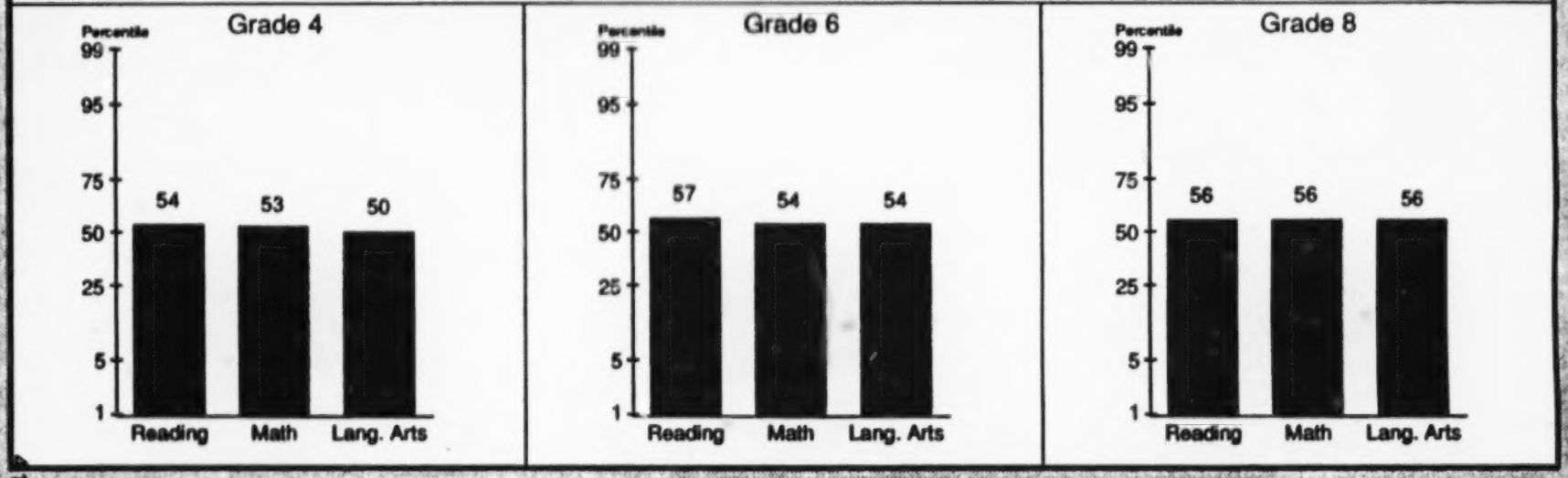
State Characteristics	
Number of Schools:	473
Square Miles:	570,833
Teachers:	6,491.6
Students PE-12:	106,251.5

Previous Experience with ITBS, Form G		
1985-1986:	No: 46	Yes: 8
1986-1987:	No: 43	Yes: 11
1987-1988:	No: 41	Yes: 13
1988-1989:	No: 40	Yes: 14

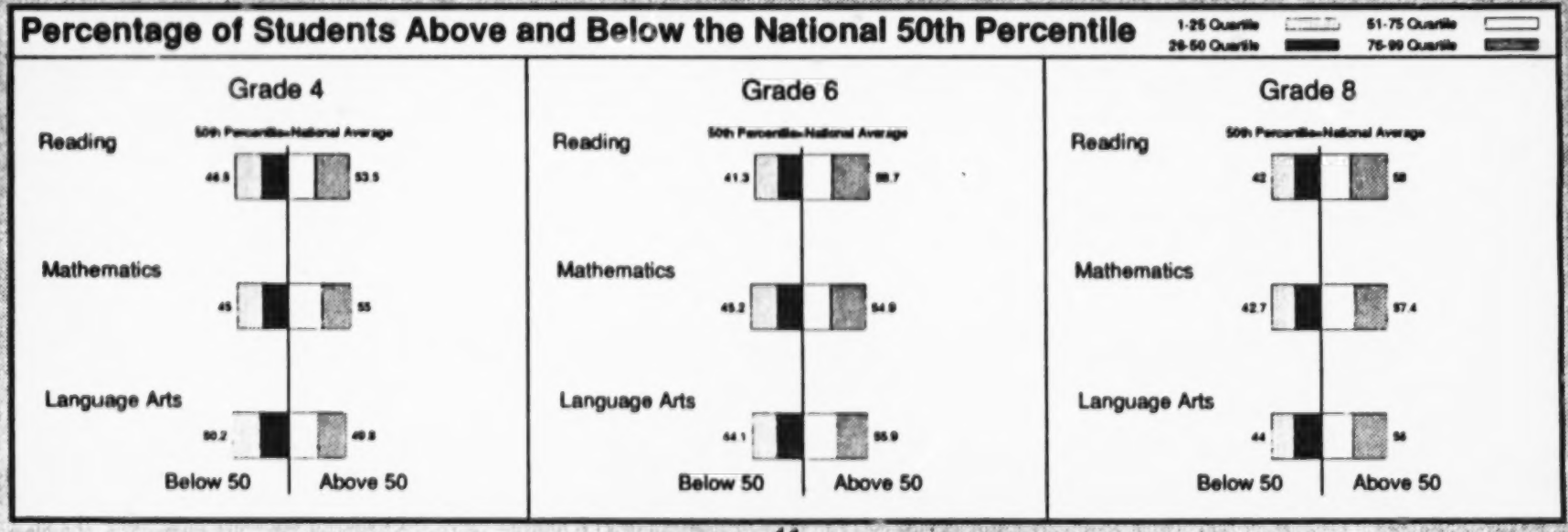
Student Enrollment:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alaska Native	1,784	19.8	1,605	19.7	1,521	20.1	4,910	19.9
American Indian	116	1.3	107	1.3	103	1.4	326	1.3
Asian/Pacific Islander	306	3.4	313	3.8	289	3.8	908	3.7
Black	423	4.7	345	4.2	333	4.4	1,101	4.5
Hispanic	162	1.8	151	1.9	137	1.8	50	1.8
White	6,219	69.0	5,622	69.1	5,189	68.5	17,030	68.8
Total Students	**9,010**	**100.0**	**8,143**	**100.0**	**7,572**	**100.0**	**24,725**	**100.0**

Students Included In this Report:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bilingual	1,153	13.4	1,114	14.3	1,014	14.4	3,281	14.0
Special Needs	632	7.4	509	6.6	453	6.5	1,594	6.8
Migrant	441	5.1	402	5.2	413	5.9	1,256	5.4
Chapter 1	718	8.4	540	6.9	283	4.0	1,541	6.6
Gifted	578	6.7	602	7.7	590	8.4	1,770	7.6
Total Students Included	**8,584**	**95.3**	**7,769**	**95.4**	**7,019**	**92.7**	**23,372**	**94.5**
Students Not Included	**426**	**4.7**	**374**	**4.6**	**553**	**7.3**	**1,353**	**5.5**

National Percentile Rank of State Average Scores



Percentage of Students Above and Below the National 50th Percentile



Railbelt Schools

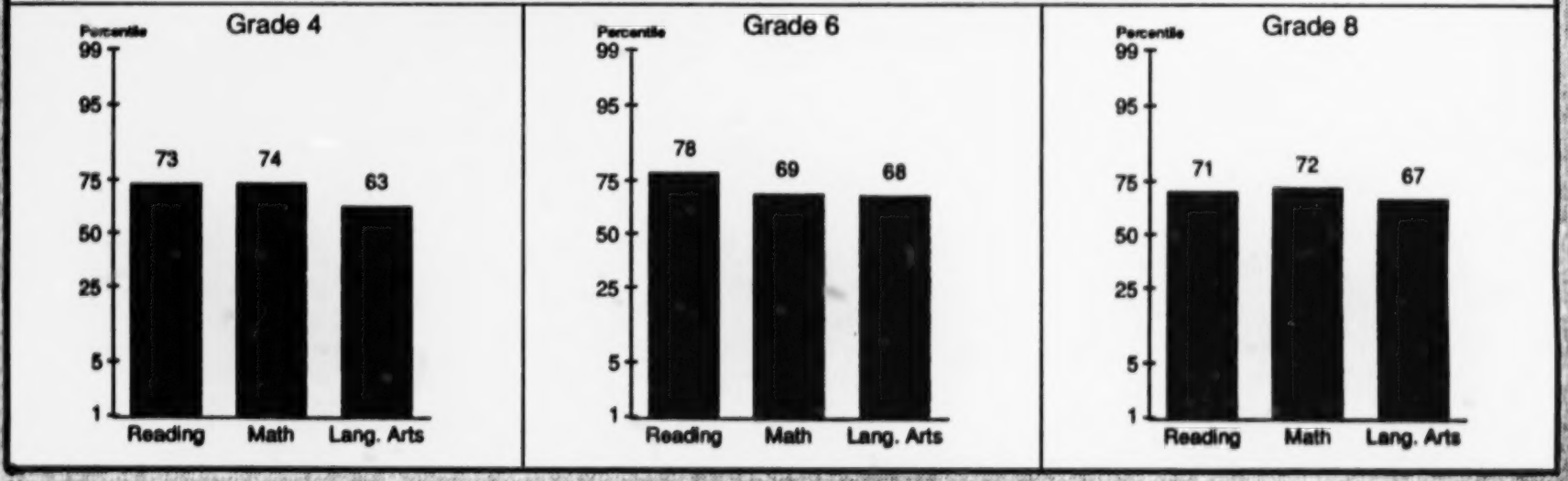
District Characteristics	
Number of Schools:	3
Square Miles:	8,978
Teachers:	27.5
Students PE-12:	346.0

Previous Experience with ITBS, Form G	
1985-1986:	Yes
1986-1987:	Yes
1987-1988:	Yes
1988-1989:	Yes

Student Enrollment:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alaska Native	0	0.0	0	0.0	0	0.0	0	0.0
American Indian	0	0.0	0	0.0	0	0.0	0	0.0
Asian/Pacific Islander	0	0.0	0	0.0	0	0.0	0	0.0
Black	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic	0	0.0	0	0.0	2	7.7	2	2.7
White	22	100.0	25	100.0	24	92.3	71	97.3
Total Students	**22**	**100.0**	**25**	**100.0**	**26**	**100.0**	**73**	**100.0**

Students Included In this Report:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bilingual	0	0.0	0	0.0	0	0.0	0	0.0
Special Needs	0	0.0	0	0.0	0	0.0	0	0.0
Migrant	0	0.0	0	0.0	0	0.0	0	0.0
Chapter 1	0	0.0	0	0.0	0	0.0	0	0.0
Gifted	4	26.7	5	21.7	4	19.0	13	22.0
Total Students Included	**15**	**68.2**	**23**	**92.0**	**21**	**80.8**	**59**	**80.8**
Students Not Included	**7**	**31.8**	**2**	**8.0**	**5**	**19.2**	**14**	**19.2**

National Percentile Rank of District Average Scores



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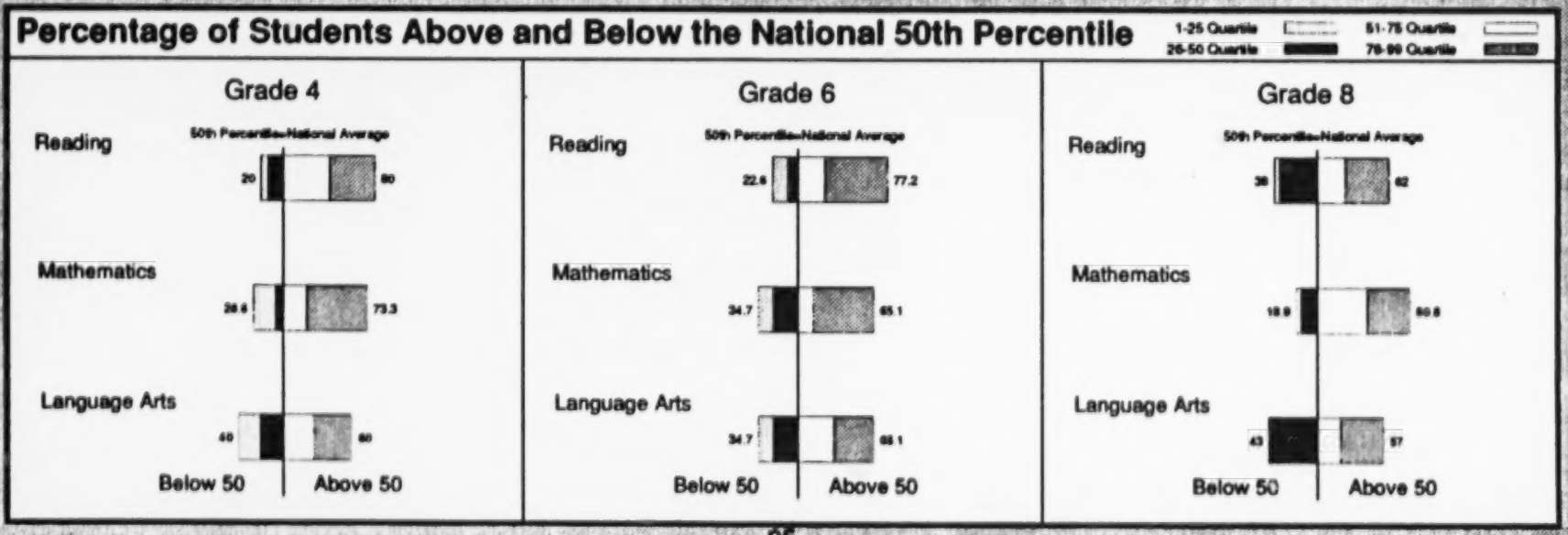
Percentage of Students Above and Below the National 50th Percentile



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Yupiit Schools

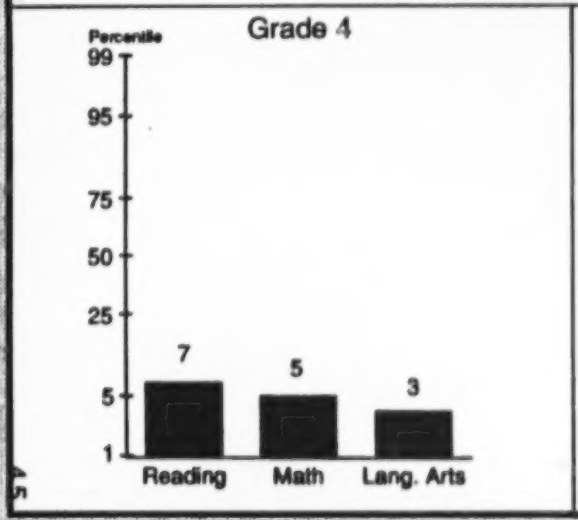
District Characteristics	
Number of Schools:	6
Square Miles:	19
Teachers:	30.3
Students PE-12:	320.0

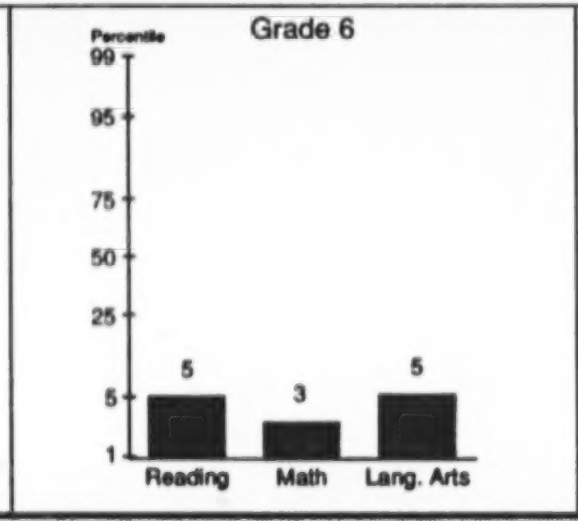
Previous Experience with ITBS, Form G	
1985-1986:	No
1986-1987:	No
1987-1988:	No
1988-1989:	No

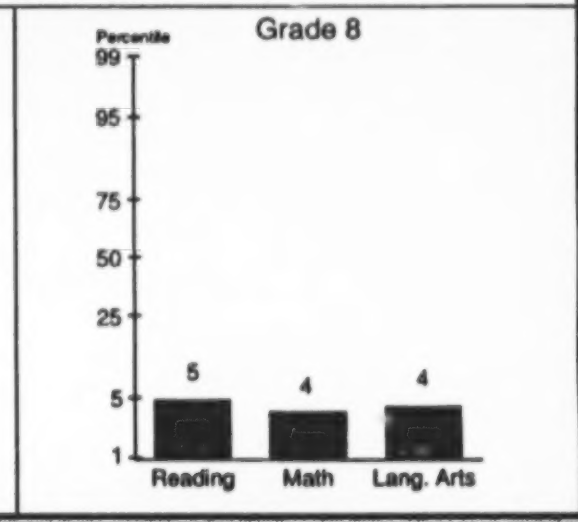
Student Enrollment:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alaska Native	18	100.0	23	100.0	26	100.0	67	100.0
American Indian	0	0.0	0	0.0	0	0.0	0	0.0
Asian/Pacific Islander	0	0.0	0	0.0	0	0.0	0	0.0
Black	0	0.0	0	0.0	0	0.0	0	0.0
Hispanic	0	0.0	0	0.0	0	0.0	0	0.0
White	0	0.0	0	0.0	0	0.0	0	0.0
Total Students	**18**	**100.0**	**23**	**100.0**	**26**	**100.0**	**67**	**100.0**

Students Included In this Report:	Grade 4		Grade 6		Grade 8		4, 6 and 8 Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bilingual	11	61.1	21	95.5	22	95.7	54	85.7
Special Needs	2	11.1	4	18.2	4	17.4	10	15.9
Migrant	4	22.2	9	40.9	12	52.2	25	39.7
Chapter 1	6	33.3	9	40.9	10	43.5	25	39.7
Gifted	2	11.1	1	4.5	2	8.7	5	7.9
Total Students Included	**18**	**100.0**	**22**	**95.7**	**23**	**88.5**	**63**	**94.0**
Students Not Included	**0**	**0.0**	**1**	**4.3**	**3**	**11.5**	**4**	**6.0**

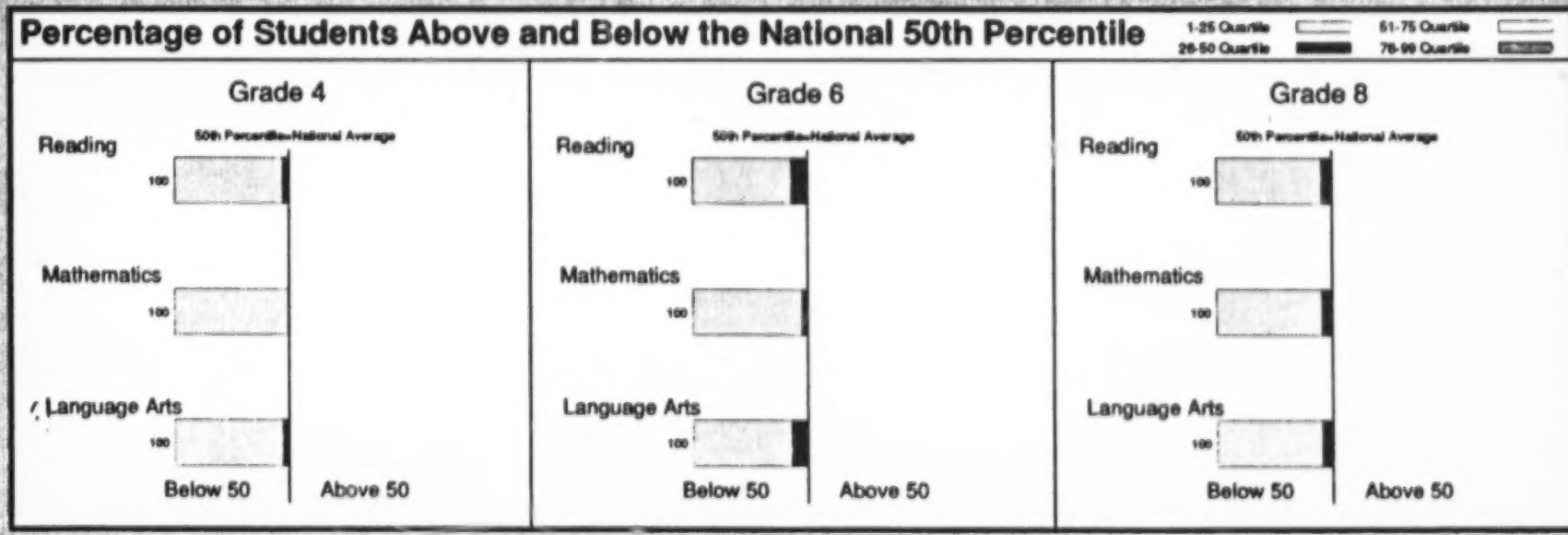
National Percentile Rank of District Average Scores







Percentage of Students Above and Below the National 50th Percentile



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